



Railway Age

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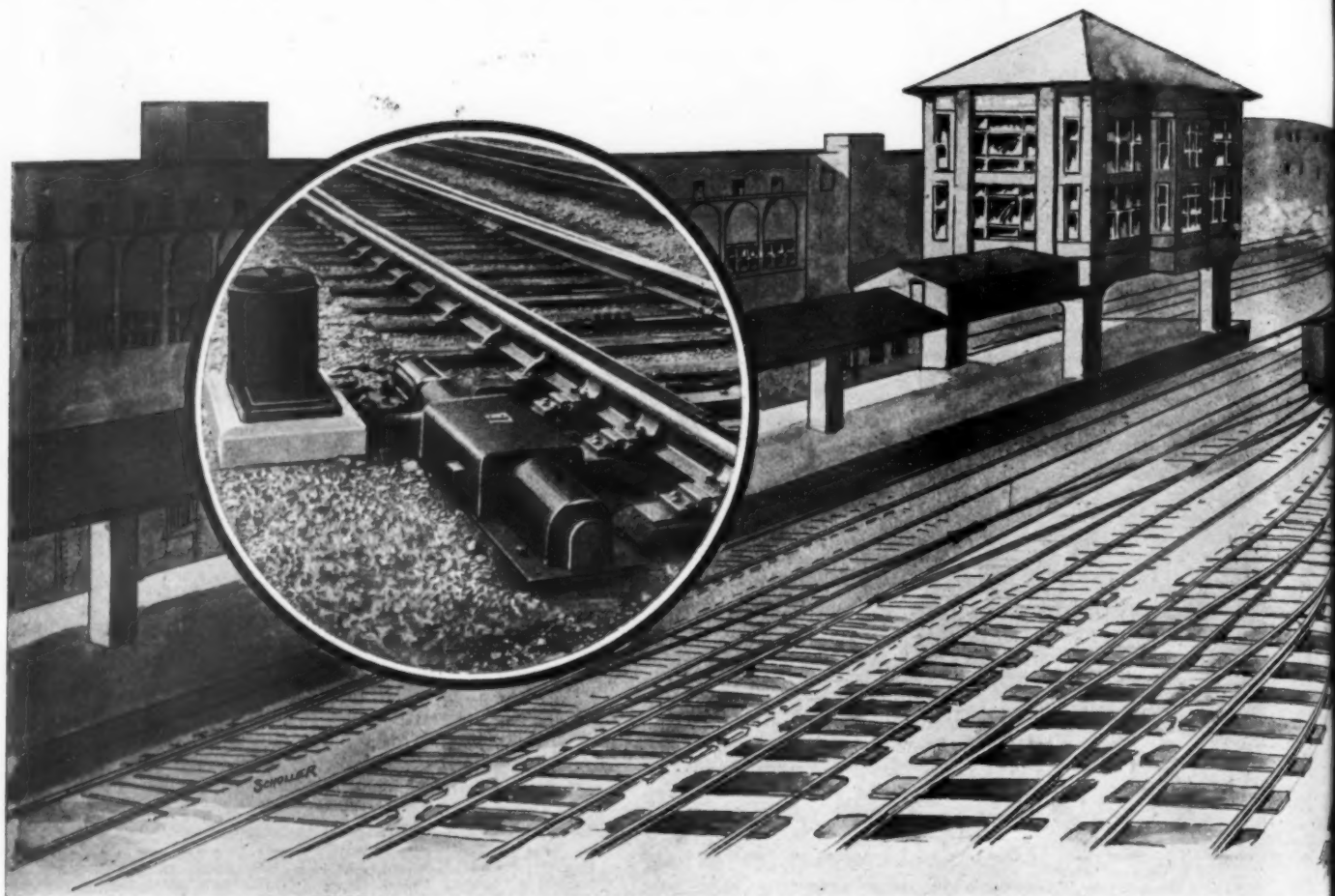
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Jacksonville Terminal



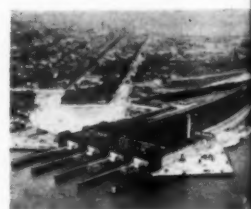
Chicago Union Station



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Camden Terminal



Kansas City Terminal



Pennsylvania Station, New York

Railway Age

Vol. 85, No. 26

December 29, 1928

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The Next Step in the Interior Decorations of Passenger Cars

DURING the past three or four years great strides have been made in the systematic utilization of æsthetic values in the architectural and decorative treatment of passenger car interiors. In several cases, for instance, colonial types of ornamentation and furnishings have been adapted with highly pleasing results. The widening of the field within which color selections may be made for interior finishes, which had its inception with the advent of lacquer finishes, has also had a marked effect in increasing the variety of treatments which are evident alike in coaches, sleeping cars, club cars and dining cars. All of these elements have been used to create an atmosphere of individuality and good taste designed to produce in the minds of the patrons the same sense of pleasure produced by the well-appointed home. One step further in this direction is still to be taken. This is the use of suitable draperies to soften the severity of outline of the car windows. It is true that this has already been done to a limited extent, and it is also true that practical considerations will probably prevent the general application of draperies for some time to come. The effect of intimacy and the touch of individuality which may be produced by suitably-selected draperies, however, should justify their use in dining cars and cars of the club or lounging type to a much greater extent than is customary at the present time.

What is the Matter with the Section Gang?

FROM the frequency with which reference is made to the efficiency of section gang work, or rather the lack of it, it is apparent that many railway officers are not satisfied with the results now being obtained for the money appropriated for this purpose. It has been contended by some that the primary shortcoming is the lack of competent foremen. There are so many section gangs and the amount of work done by any one gang is relatively so small that the railroads have not felt justified in paying a rate of wage which would attract men of considerable administrative ability. It is also to be questioned whether the volume of the work to be done and its character are such as to attract men of ambition, initiative and enterprise. Another difficulty arises from the fact that section work is of such a diversified nature and involves so many duties of a more or less emergency character that it is exceedingly difficult to organize it on a thoroughly efficient production basis. This has proved the primary stumbling block in the introduction of labor-saving equipment in that portion of track maintenance handled by section gangs. In view of the large expenditure involved, the

problem of increasing the efficiency of section gang work is an important one. Various plans for improvement have been suggested and a few have been subjected to trial. The entire subject is worthy of further study.

Icing Improvements

THE improvement in the handling of perishable traffic has been truly remarkable in the last few years, and no small part of this is attributable to improved icing methods. While there are still a number of highly efficient icing plants, which depend upon natural ice for their supply, most of the larger icing stations are now equipped with ice-making machinery, which assures a more reliable supply. The natural ice plants are now confined largely to such places as Laramie, Wyo., on the Union Pacific, where severe cold in the winter and an available lake, provide an abundant and dependable harvest yearly. There has been a vast improvement also in the facilities for icing cars. The growth of the perishable traffic has justified expenditures all over the country for new and more modern conveying machinery and for larger and better-equipped ice-docks. The old 10-and 15-car capacity docks have given way to island type platforms with room for 60 to 80 cars on each side. These new facilities have made improved methods possible, whereby an average icing time of two cars a minute is being attained in a number of cases and in at least one case, on the Indiana Harbor Belt at Blue Island, Ill., three cars per minute have been iced as a regular practice. These expenditures are justified for a number of reasons. They aid in increasing the amount of a traffic paying high rates and, by accelerating the movement, they reduce the amount of claims, which have been the bane of the railways in handling perishables.

Unprofitable Branch Lines

THE two principal means whereby branch line losses have been reduced, and, in some cases converted into profits, are the substitution for steam trains of either motor rail cars or motor coaches for steam passenger service. The Chicago, Milwaukee, St. Paul & Pacific, a road with a large percentage of branch line mileage, has used both of these methods to excellent effect. In addition, where conditions did not seem to warrant the use of either the rail car or the coach, a third method has been evolved. This consists of substituting mixed train service for passenger service. The Milwaukee has gone into this development on a large scale and now operates 25 such runs, resulting in a saving of 66 passenger trains, which were formerly operated 2,651 miles daily. It was necessary, of course,

to sell the idea to the patrons before the plan could be inaugurated. In every case, the Milwaukee was frank in its dealings with the public and the railway commissions. The facts as to the losses being sustained were explained. It was also pointed out that, while the new plan would result in some diminution of the passenger service, it would supply improved freight service. Since passenger traffic had dwindled to almost nothing on these runs, the improved freight schedules proved to be the controlling factor in most instances. By this means, it was possible in practically every instance to obtain the approval of the commissions and the patrons. In fact, in some cases the patrons actively recommended the change. This means of reducing branch line losses may not be adapted to all localities, but where it is possible, it works out excellently.

A Government Bureau's Opposition to Motor Transport Legislation

THE Chief of the Bureau of Public Roads of the Department of Agriculture, T. H. MacDonald, with a bill to regulate interstate motor coach lines now pending in Congress, has issued a statement opposing such legislation. In view of the fact that this statement was issued on official government stationery, it presumably reflects not merely the opinion of Mr. MacDonald as an individual, but is an official pronouncement on a matter of policy. Quite aside from the questionable propriety of a government bureau's taking sides on a controversial public question, the objections to interstate motor coach regulation advanced by Mr. MacDonald are, to speak most kindly, extremely tenuous. These objections he puts in the form of questions. He asks (1) whether competition between different forms of transportation is a proper cause for regulation; (2) whether it is acceptable public policy to grant franchises to all lines now operating, but to reserve the right to choose among those who may ask permission in the future; and (3) whether there has been sufficient investigation "to justify projecting the federal government into essentially local problems". The answers to these questions are so obvious that, if they did not have the aegis of a department of government behind them, they could be dismissed without comment. The first question seems to assume that competition between different forms of transportation is the sole reason for regulation. This, of course, is not true, although raising the question of what ethical right a presumably impartial government has to hamstring one competitor and give free rein to another effectively answers it. As for the second question, although it might be better to place all operations on an equal basis, nevertheless the practice of showing previous entrants into a field some preference is a well-recognized legislative practice from which it might be difficult to depart. On the third question it may be said that if regulation is delayed until "experts" agree on the form it shall take, there never will be any regulation. Almost every state in the union has some form of motor coach regulation, so the proposal for federal regulation is nothing radical, not does it involve any problems outside the compass of average human understanding. Mr. MacDonald speaks of projecting the federal gov-

ernment into a "local problem". The fact is that the "local problem", i.e., intrastate transportation, is in most states, as far as passenger transportation is concerned, already under the control of state authority. What is now urgently needed is that the federal government should take as good care of that part of the highway problem which comes under its jurisdiction as the several states have already done with their part.

Draft Gear Resolutions

AS railroads plan their campaigns of improvement for 1929, hardly any equipment detail deserves closer study and consideration by both operating and mechanical officers than does the present condition of freight car draft gears. While notable progress has been made in some instances in systematizing draft gear inspection, and repairing or replacing defective units, many draft gears still in service are unquestionably almost totally unfitted, for one reason or another, to perform their real function of protecting cars and lading from the shocks sustained in road and switching service. One road which has for some time been inspecting in the neighborhood of 3,000 freight cars a month, with particular reference to draft gear condition, finds approximately 18 per cent of the total number of draft gears inspected defective. As all system cars appear on the repair tracks of this road for repairs, the draft gears are inspected. Where gears have excessive slack or broken parts, they are dropped and the necessary repairs made. The draft gears on all system cars held for heavy repairs are dropped without exception and all parts of the draft gears and attachments are thoroughly inspected and repaired. It is not difficult to imagine how much the replacement of defective draft gears saves this road in reduced damage claims and lessened cost of car repairs. Almost no resolution that the railroads, as a whole, can make, will be more productive of economy in many different ways in 1929 than a determination to raise the general standard of condition of draft gears on American freight equipment.

The Cost of Railway Supplies

THE railways spend so large a sum in the aggregate each year for the materials and supplies with which to operate, maintain and improve their properties, that the cost of these materials should logically receive much study and attention. It is evident from the reductions which have been made in railway inventories and the improvements in storehouses and storekeeping methods, that a great deal of attention is being given to these materials after they reach the railroads, but it is not so evident that equal attention has been given to them before they reach the roads. Are the needs of the railways being served most advantageously by the materials procured at present? Are the costs greater than necessary? These are questions which may well be considered in connection with the present purchase work particularly when so many considerations other than prices and quality strive for recognition in determining when, how and what a railroad should buy. Reference has already been made in these

columns to the influence which a railroad's traffic is sometimes allowed to have upon its purchasing work. The continuing practice of many roads in letting the traffic they try to hold or get be more than a secondary consideration in buying, is the greatest menace to sound and economical purchasing that exists in transportation at the present time. But traffic is not the only condition adversely affecting purchasing which railroads face. There is the problem of striving to operate on low inventories without causing emergency buying with its higher costs, and also the prevalence of much piecemeal buying by the railways with the higher costs of production it causes the manufacturer. Insufficient standardization by different railroads prevents the manufacturers from producing materials economically for all. Some roads are sluggish in adopting or perfecting material-handling methods that will diminish costs of distribution to points of use. Much has been said in the last few years about scientific purchasing, but it is certain that scientific purchasing can be approached only after the railroads, as well as other buyers, succeed in reducing the effect of these factors upon the cost or quality of the material bought. Here are problems inviting attention during the coming year.

Examples of Safety Accomplished by Signals

FOR many years automatic block signals were installed primarily to increase the safety of train operation. In this modern era of railroading it is possible that too much stress has been placed on the idea that every new facility must effect a saving in operating costs sufficient to yield an adequate return on the investment. Because of the fact that signals increase track capacity by reducing the spacing between following trains, and eliminate many train stops, such installations have easily effected the required savings, and, as a result, they have been extended over several thousand miles of lines each year for the past several years. Safety of train movement is an advantage that is not being given due consideration by many railroad officers. In the first place, many accidents are prevented by signals without anyone knowing of the circumstances. Again, if a train order is overlooked and an accident is prevented by the signals, no operating officer ever learns of the incident, if the crews can keep it quiet. At best, such news does not "trickle" up to the executives. Only recently a vice-president, while making a trip over the line, asked the superintendent whether the new signals had accomplished anything in the way of safety, and received the reply that two accidents had been prevented during the last year. On a road that made several extensive installations last year, two train accidents were prevented on one division in a recent week. In one case a main line switch was left open, and in the second case a rail was broken. On another road the signals recently prevented an accident where a three-foot section was broken out of a rail. These are only a few of the occasions on which signals functioned to prevent accidents. In order that more complete data on this feature may be available when considering future installations, one road has inaugurated instructions to all employees concerned with the operation of trains to report every case where signals

have aided in preventing accidents. Where thorough investigations are made, it will be found that on many divisions, increased safety of train operation should be the primary rather than the secondary object of a proposed installation.

Concerning Railway Taxes

WHEN railway tax accruals exceeded \$39,000,000 last October they set a new high monthly record. Furthermore, railway taxes have been higher this year, in proportion to total earnings, than ever before. During the war, when the Federal government was operating the railways, it restricted taxation of them. As soon as they were returned to private operation increases in their state and local taxes began to be made faster than ever before, and have continued ever since. In 1920 it took 4.39 per cent of the total earnings of the railways to pay their taxes. In 1927 it took 6.13 per cent, and in the first ten months of 1928 it took 6.3 per cent.

Federal taxes are based upon earnings, and declined in 1927 because earnings declined. Most state and other taxes, on the other hand, are fixed regardless of earnings, and they increased in 1927, and undoubtedly increased again in 1928, as total railway taxes were larger in the first ten months of this year than in the corresponding part of last year.

In its "Statistics of Railways" for 1927, which has just been issued, the Interstate Commerce Commission gives some interesting figures regarding the taxation of railways by the federal government and by state and other governments. In 1917, the first year in which this country participated in the war, federal railway taxes were \$57,642,722, and other railway taxes were \$156,277,373. In 1921, the year of greatest depression since the war, federal taxes were only \$37,278,171, but other taxes were \$238,597,819. In 1927 federal taxes were \$84,591,269, and in the three years ending with 1927 averaged \$93,112,633. Other taxes in 1927 exceeded all previous records, being \$291,518,981, and averaging over \$281,000,000 during the three years ending with 1927.

The federal government, during the last ten years, took part in and largely paid the expenses of a great war, but as its taxation of the railways was based on their earnings it increased their taxes during the decade only about 46 per cent. The state and other governments have not carried on or borne the expenses of a war, but they have increased the taxes they have levied on the railways more than 86 per cent. "Peace hath her victories no less renowned than war", said the poet. From an economic standpoint some of the victories of peace, especially those of the tax-gatherer, may be more deadly than those of war. In this country, under present conditions, the way state and local governments are conducted seems to be as costly as war.

The blame should not be placed entirely or even mainly on the politicians, as is so often done. It should be placed upon all those, constituting a large majority of the population, and including most business men, who constantly encourage large governmental expenditures for the supposed benefit of the public without carefully considering whether the re-

sulting benefits will be equal to the taxes the public will have to pay for them. The railways probably are taxed more heavily in proportion than most business concerns and owners of property, and in the long run the public pays in rates the taxes it collects from the railways. The case of the railways is simply an extreme illustration of the way in which public expenditures are being recklessly increased in many ways without the public, which is really responsible, considering the fact that the day of reckoning will come when the taxpayer presents his bill.

Undermining the Commission

THE Senate has confirmed President Coolidge's reappointment of three members of the Interstate Commerce Commission, Messrs. Clyde B. Aitchison, Claude R. Porter and Patrick J. Farrell. This action will be approved by most persons who follow closely the work of the Interstate Commerce Commission and are familiar with the circumstances and influences, which affect the selection of commissioners. These circumstances and influences, sectional, political and otherwise, are such that it is usually best for men who have had experience on the commission to be retained, if they are willing to continue to serve.

It always has been questionable whether government regulation of railways could be made successful. It has been agreed by those who have studied the subject that one essential to its success is that it shall be delegated to a commission composed of honest, able and public-spirited men who shall be judicial and impartial shall possess or acquire special knowledge of transportation problems and shall be inspired constantly by a desire to promote the national interests.

There never before was a time in the history of federal regulation when there was such need for strengthening the commission's personnel, defending it from outside pressure and encouraging it to regulate in accordance with its own views of sound policy, as there is now. There always is much criticism of the commission from railway officers, shippers and public men, and no doubt much of this criticism is justified. But to criticize the commission's decisions and policies is one thing, and to force it to make decisions and adopt policies not in accordance with its own views is quite a different thing. The questions upon which the commission must pass are extremely important and highly controversial, and therefore, whatever its decisions regarding them may be, they are likely to be criticized. Plainly, however, criticism of the way the commission performs its proper functions, and efforts to compel it to perform them otherwise than in accordance with its special knowledge and considered judgment, may have very different consequences.

The independence and usefulness of the commission are now being threatened in different ways. Congress has been manifesting a tendency to constitute itself a court of appeal from the commission. A year ago the Senate refused to confirm the reappointment of Commissioner Esch because of the way he voted in a particular case. There have been persistent efforts to get Congress to pass a law abolishing the sleeping and parlor car surcharge, which was authorized and has been upheld by the commission.

More insidious, and therefore perhaps more dangerous, have been efforts that have been made in Congress to influence the commission to regulate the railways in accordance with the views of Congress, rather

than in accordance with the views of the commission. Direct rate-making by Congress would be so generally condemned that there is never likely to be very much of it. There is more danger of Congress imposing its views of regulation upon the commission. The effects would be virtually the same as direct rate-making by Congress, but it would be much more difficult to arouse public sentiment against such regulation because it could be defended as having actually been applied by the commission.

By the passage of the Hoch-Smith resolution requiring the commission to make a thorough investigation of the freight rate structure Congress imposed upon the commission a task so enormous that it is seriously interfering with all the other work the commission should be doing. This, however, is not the worst thing about the Hoch-Smith resolution. The worst thing about it is that by its passage Congress laid down certain principles by which the commission should be governed in fixing rates. Under this resolution it is to fix them in accordance with the conditions existing in the several industries, and to make the lowest lawful rates on the products of agriculture. If this means anything at all it means that the commission shall change the entire policy it had been following in regulating rates—that it shall begin making rates that will discriminate in favor of industries that are not prosperous and against industries that are prosperous.

Most business men who understand its significance denounce the Hoch-Smith resolution. Similar in character, however, is another piece of legislation passed at the last session of Congress which many of these same business men endorsed and now defend. This is the Denison bill, which trebled the appropriation for the Inland Waterways Corporation. No doubt if the commission had considered itself free to proceed fairly and in accordance with its own judgment it would have had hearings before issuing orders establishing through routes and rates between the railways and inland water carriers. It decided, however, that, by the provisions of the Denison bill, Congress indicated that the railways were to be denied hearings preceding the issuance of orders. The railways were bludgeoned into refraining from contesting the constitutionality of the Denison bill, as thus interpreted, by threats of adverse legislation of other kinds, and especially as regards the sleeping and parlor car surcharge. Just how business men who supported and now defend the Denison bill can believe they can consistently criticize the Hoch-Smith resolution we do not find it easy to understand.

The commission is the creature and agent of Congress and must carry out its mandates. Because, however, of the commission's opportunities for investigation, its superior knowledge of transportation questions and its non-political character, the transportation policy of Congress should be based upon information and advice furnished by the commission, instead of the commission's policy being dictated by Congress. No piece of legislation affecting interstate transportation should be passed by Congress without having previously been studied and endorsed by the commission. Appeals from the commission's decisions interpreting and applying legislation should be carried to the courts, and not to Congress.

There is now a stronger tendency to disregard and violate these principles than ever before in the history of federal regulation. This tendency should be resisted, and efforts should be made to strengthen the commission's position by everybody who desires to see our policy of government regulation of railways succeeded.

Cleveland Project

Union Station Far Advanced

A description of the plan and a report of the progress made on this noteworthy undertaking



The Terminal Tower Building Is An Imposing Feature

TANGIBLE evidence of the marked progress which has been made in the prosecution of the project for a new union station at Cleveland, Ohio, is not lacking to the visitor in that city. The Terminal Tower building, a 52-story structure with 560,000 sq. ft. of floor area, which is to serve as the primary entrance to the station, adjacent to the Public Square at Cleveland, has been completed and is already occupied as an office building, the preparation of the site for the station tracks has been practically completed, and contracts for the main station structure have been awarded and work is under way. The grading and overhead street bridges for the two miles of west approach have been completed, and rapid progress is being made on the grading of the two miles of east approach. Contracts have been awarded for approximately 115,000 tons of steel required for the main station building, buildings in the station area, street viaducts over the station, and bridge work on the approaches, including the 3,450 ft. of four-track viaduct over the Cuyahoga valley, which is now being erected. In addition, work is now under way on the construction of additional tracks on those portions of the main line of the Nickel Plate, the Cleveland Short Line and the Cleveland, Cincinnati, Chicago & St. Louis, which will serve as approaches for the trains of the Nickel Plate, the New York Central and the Big Four to the station from the east and the west. It is anticipated that the new terminal, which will entail an expenditure of over \$60,000,000, will be ready for use early in 1930.

Project Under Way for 10 Years

This project first received public notice in 1918 when A. H. Smith, late head of the New York Central System, appointed an engineering committee to investigate the plan which had been proposed for a union station at Cleveland, fronting on the Public Square. Following a favorable report by this committee, the plan was sub-

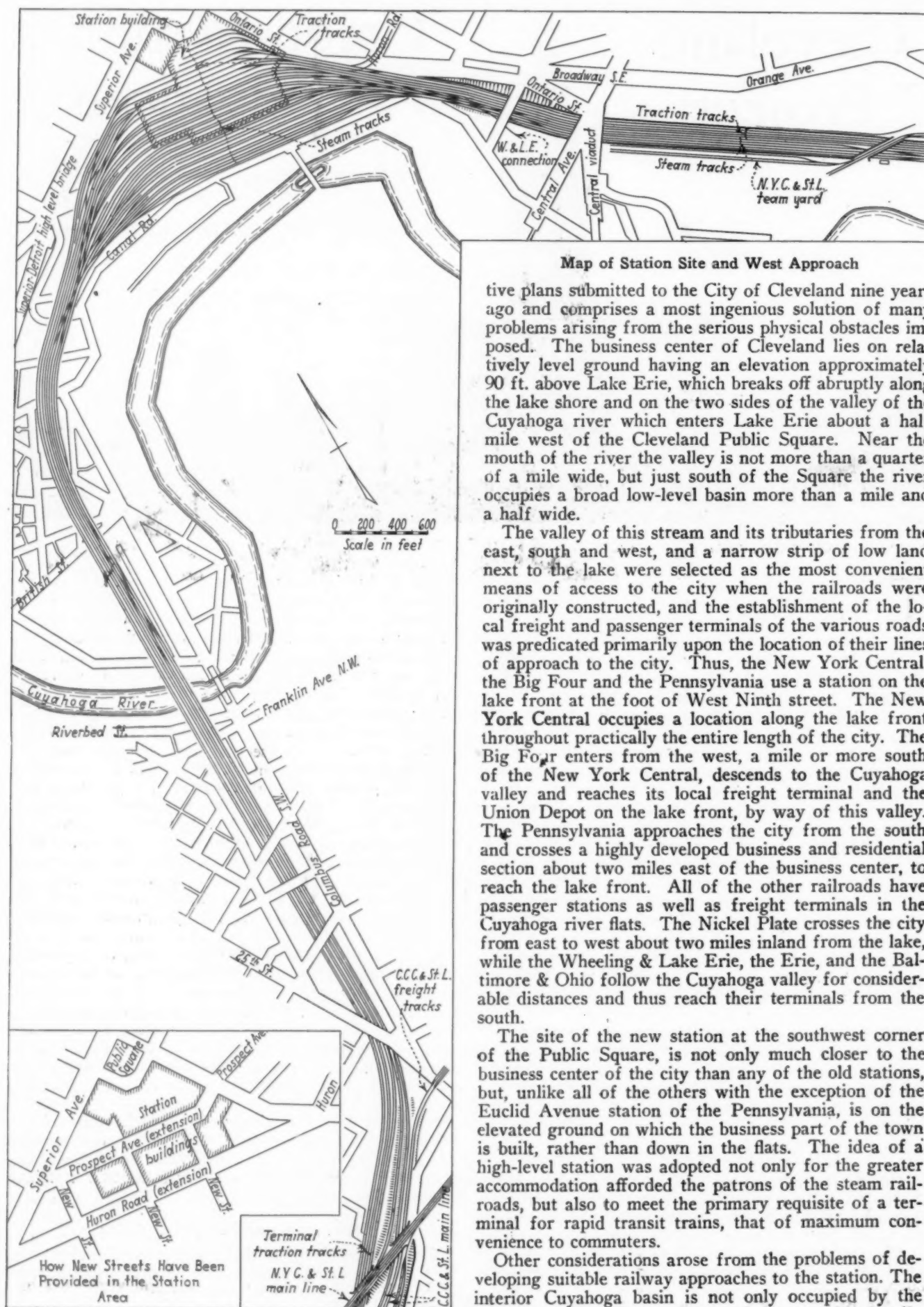
mitted to the city, accepted by ordinance enactment on January 1, 1919, and ratified by popular referendum on January 6. The participating railroads reached an agreement with the Cleveland Union Terminals Company to carry out this project in the fall of 1920 for which authority was granted by the Interstate Commerce Commission in 1921. Actual prosecution of the work of design and construction was commenced on January 1, 1922, with the organization of the terminal company's engineering corps.

As originally contemplated and carried to its present state, the project embraces the idea of a passenger terminal capable of accommodating not only the passenger trains of all of the steam railways entering Cleveland, but also of certain electric lines, with a view to the further development of the rapid transit suburban service, which is now compelled to reach the business center of the city over the city streets. The agreement with the city also provides for the electric operation of the steam road trains using the station.

Construction was made possible through the co-operative instrumentality of three properties, the New York Central, the Nickel Plate and the Big Four, which are the stockholders in the Cleveland Union Terminals Company and have guaranteed the bonds issued by that company for the purpose of financing construction. These railroads, and the Cleveland Traction Terminals Company, (the rapid transit company) have entered into agreements to operate their passenger trains into the new station upon its completion. Whether any of the other four railroads having lines into Cleveland, namely, the Wheeling & Lake Erie, the Baltimore & Ohio, the Erie and the Pennsylvania, will use the new terminal is not known at this time.

Plan Presents Many Obstacles

The general layout of the new terminal deviates only as to minor details from that embodied in the tenta-



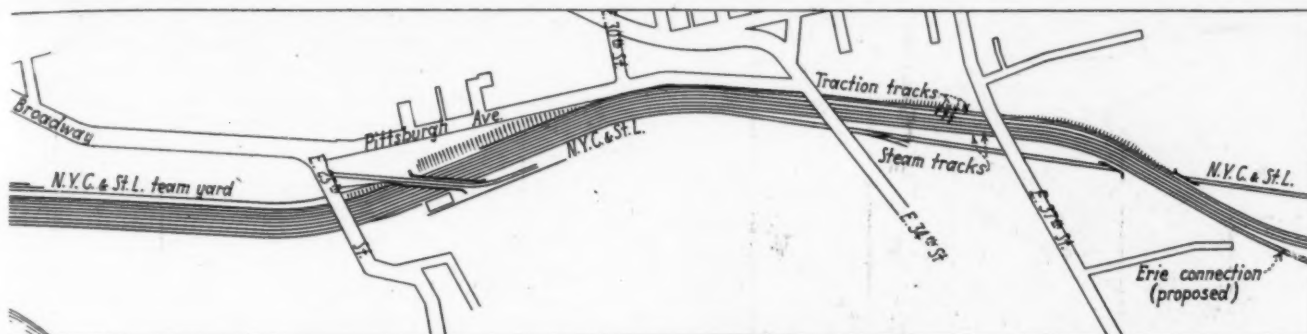
Map of Station Site and West Approach

tive plans submitted to the City of Cleveland nine years ago and comprises a most ingenious solution of many problems arising from the serious physical obstacles imposed. The business center of Cleveland lies on relatively level ground having an elevation approximately 90 ft. above Lake Erie, which breaks off abruptly along the lake shore and on the two sides of the valley of the Cuyahoga river which enters Lake Erie about a half mile west of the Cleveland Public Square. Near the mouth of the river the valley is not more than a quarter of a mile wide, but just south of the Square the river occupies a broad low-level basin more than a mile and a half wide.

The valley of this stream and its tributaries from the east, south and west, and a narrow strip of low land next to the lake were selected as the most convenient means of access to the city when the railroads were originally constructed, and the establishment of the local freight and passenger terminals of the various roads was predicated primarily upon the location of their lines of approach to the city. Thus, the New York Central, the Big Four and the Pennsylvania use a station on the lake front at the foot of West Ninth street. The New York Central occupies a location along the lake front throughout practically the entire length of the city. The Big Four enters from the west, a mile or more south of the New York Central, descends to the Cuyahoga valley and reaches its local freight terminal and the Union Depot on the lake front, by way of this valley. The Pennsylvania approaches the city from the south and crosses a highly developed business and residential section about two miles east of the business center, to reach the lake front. All of the other railroads have passenger stations as well as freight terminals in the Cuyahoga river flats. The Nickel Plate crosses the city from east to west about two miles inland from the lake, while the Wheeling & Lake Erie, the Erie, and the Baltimore & Ohio follow the Cuyahoga valley for considerable distances and thus reach their terminals from the south.

The site of the new station at the southwest corner of the Public Square, is not only much closer to the business center of the city than any of the old stations, but, unlike all of the others with the exception of the Euclid Avenue station of the Pennsylvania, is on the elevated ground on which the business part of the town is built, rather than down in the flats. The idea of a high-level station was adopted not only for the greater accommodation afforded the patrons of the steam railroads, but also to meet the primary requisite of a terminal for rapid transit trains, that of maximum convenience to commuters.

Other considerations arose from the problems of developing suitable railway approaches to the station. The interior Cuyahoga basin is not only occupied by the winding course of the river and a network of rail-



Map of East Approach

way tracks, but has been subjected to intensive industrial development. Consequently, any plan to build adequate station approaches at the level of the flats, even at a sufficient elevation to permit of grade separation with existing tracks and streets, would have entailed an almost entire reconstruction of existing improvements. A high-level plan also afforded an effective solution of the problem of crossing the river south of the station without the necessity for a movable span for river navigation. Notwithstanding this, however, development of the site for the station and provision for the approaches according to the plan adopted, proved expensive. A large amount of improved property was incorporated within the necessary right-of-way, and whole blocks of business, industrial and residence buildings had to be razed to make room for the station and approach tracks.

General Location

That portion of the new terminal development embracing the property of the terminal company, represents the form of an irregular shaped "V" with the passenger station at the point, while one leg extends along the east slope of the valley to a connection with the Nickel Plate and the Cleveland & Youngstown near East Thirty-seventh street, and the other crosses the north end of the Cuyahoga valley and passes through a cut in a shoulder of the bluff to a connection with the Nickel Plate and the Big Four where those lines leave the valley on the west. The approximate length of the line between these termini is about four miles.

Under this plan the terminal tracks make direct contact with the lines of the Nickel Plate, the Cleveland & Youngstown, and the Big Four. The Wheeling & Lake Erie also has access to the new terminal by a connection with the east approach, a short distance from the east throat of the station tracks. Trains of the New York Central from the east will approach the station via the tracks of the Cleveland Short Line from Collinwood to East 105th street and over the Nickel Plate from East 105th street to the east end of the terminal property. Work is now under way on a project to provide additional main tracks on this route to take care of the increased traffic to be routed over it. On the west, New York Central trains will be routed over the west leg of the terminal property to a connection with the Big Four and thence over the tracks of that line to a connection with its own lines at Berea. Plans are also being prepared for increased track capacity on the Big Four between Cleveland and Berea.

In addition to the physical connections described above, plans have been developed to provide connections with the Baltimore & Ohio, the Erie and the Pennsyl-

vania in the event that any or all of these roads should decide to avail themselves of the new terminal facilities.

Plan Embodies Air-Right Embodiment

The plan for the new passenger station embodies a maximum utilization of air rights for commercial purposes. With frontage not only on the Public Square but also on Superior avenue and Ontario street, two of the primary thoroughfares radiating from the Square, the station property has a high potential value for commercial use. Rather than utilize an appreciable portion of this frontage for a station structure of the monumental type it was decided to develop as much of this frontage as possible with business buildings for commercial occupancy. Thus, the Tower building is devoted to high grade office space, while the northwest wing comprises the Hotel Cleveland, and the east wing, which will soon be under construction, will be occupied by a department store.

On the southwest corner of Ontario street and Prospect avenue and extending back to Huron road, work is now in progress on the construction of 18-story Medical Arts, garage and Transportation buildings. The Medical Arts building, on the corner of Ontario street and Prospect avenue, will be 148½ ft. by 161 ft. 8 in. and will contain commercial space on the first floor and offices for the medical and allied professions on the 17 upper floors. The garage and Transportation building, facing Huron road and connecting with the Medical Arts building, will be slightly irregular in shape, with a depth of about 152 ft. 3 in. and an average width of about 166 ft. The lower nine stories of this building will contain a garage having a storage capacity of 1200 cars, with an entrance from Huron road; the upper nine floors will be devoted to office use and have the entrance on Prospect avenue, adjoining the entrance to the Medical Arts building. The elevator service for the Medical Arts and Transportation buildings will be entirely separated, each building having its own service.

However, the possibility of such developments is not restricted to the frontage on the Public Square. The proposal to locate the station on the Square was originally subjected to severe criticism because of its possible effect in aggravating the serious street traffic congestion which now prevails on the Public Square and adjacent streets. This has been brought about by the fact that the Square is located at the narrowest point in the high-level land between the lake front and the river valley. As a consequence east and west traffic in the business center is limited here to four streets, of which only one, Superior avenue, which connects with the high-level bridge over the Cuyahoga river, can serve as an artery for through traffic between the east and west sides of the city.



View of the East Approach From the Tower—The Right of Way Lies to the Right of the Wide Street at the Left

This criticism has been overcome by incorporating a provision in the plan for a marked improvement in the street layout. By extending Prospect avenue and Huron road west from Ontario street across the station layout as 100-ft. streets to connect with Superior avenue, it will be possible to relieve Superior avenue at the Public Square of a large part of its through vehicular traffic. Furthermore, according to the plan, vehicular traffic to and from the station for passengers, baggage, express, mail, etc., will enter the station by way of one of the three new north and south streets which will connect the extensions of Prospect avenue and Huron road. Incidentally the new street layout affords added street frontage available for commercial development.

Station To Be of the Two-Level Type

The new station will be of the through, two-level type with all tracks on a lower level and waiting rooms, baggage, mail, express and other facilities on an upper level. However, with the exception of the street entrances, the station facilities will all be below the street level. The arrangement can best be explained by comparing the elevations of the various units with the elevations of the streets. Huron road and Prospect avenue extensions will be at Elevation 100, while the street level at the Public Square is at Elevation 85. The concourse, ticket lobby and all other station facilities, except the tracks will be at Elevation 72.5 or slightly higher. Thus, the main lobby level will be only 12.5 ft. below the main entrance on the Square, but 27.5 ft. below the level of the streets which cross over it, so that there will be ample headroom for minimum ceiling heights. The track platforms will be at Elevation 52.67, or 19.83 ft. below the concourse floor level.

The main axis of the station will lie north and south, or at right angles with the tracks. This axis bisects the

corner of the Square; the main entrance to the station through the Tower building is symmetrical about it.

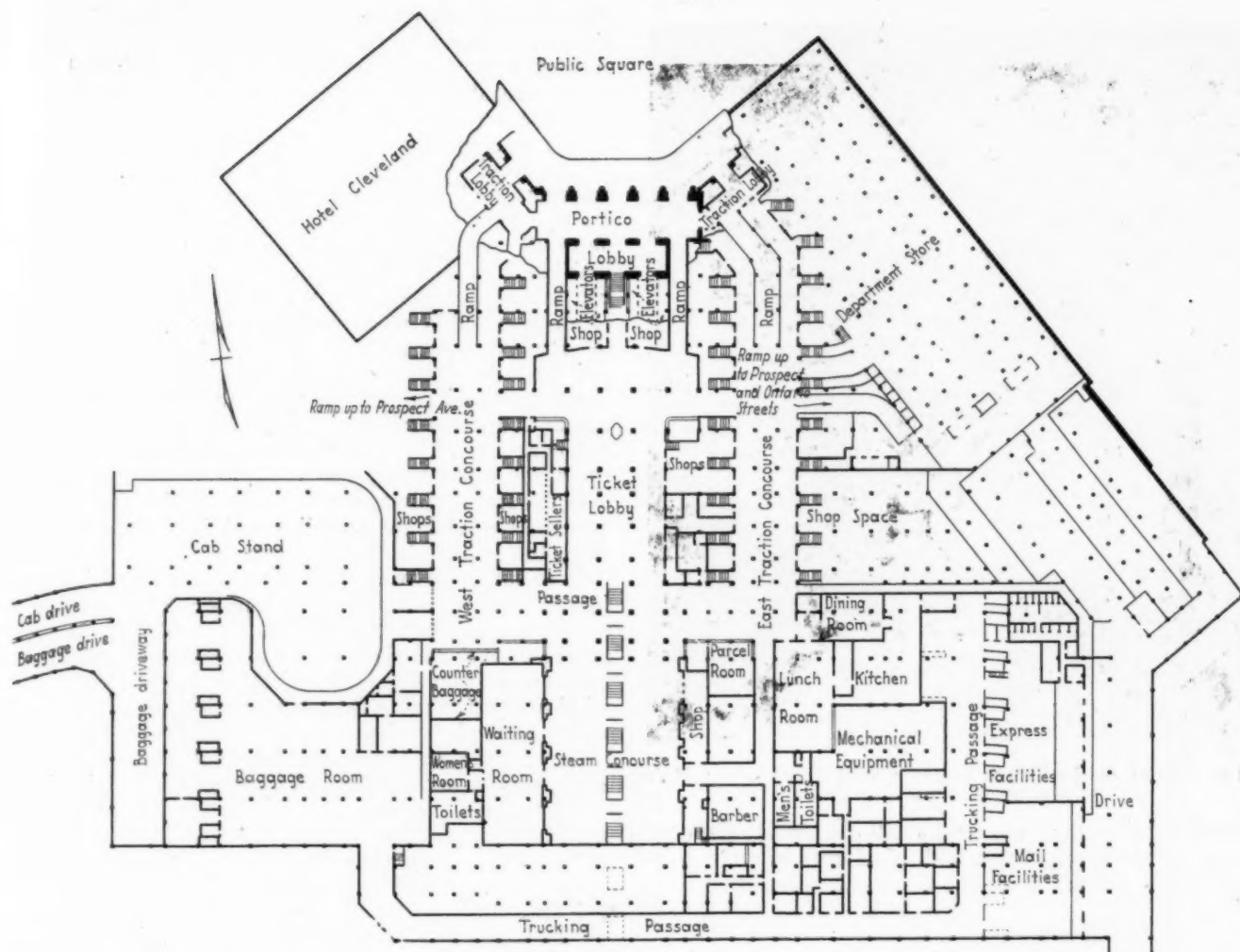
The main station facilities, exclusive of the baggage and express spaces, cab stand and auxiliary equipment, will occupy a central structure about 640 ft. long by 340 ft. wide. The main feature of this area will be a central public space, about 450 ft. long and from 91 to 154 ft. wide, for the accommodation of the steam road passengers, and two side concourses 59 ft. wide for the use of traction passengers. The steam road passenger space will be afforded access to the street entrance in the tower building by two ramps and each of the traction concourses by one ramp, entrances to these ramps in the street portico being separated sufficient distances to obviate confusion and insure segregation of the steam and traction passengers. Separate entrances to the traction and steam concourses will also be provided by ramps leading from their outer sides to Prospect avenue, east and west of the station and by stairs from Prospect avenue at the station axis.

Thus the steam and traction passengers will be effectively separated, but with adequate provision for access by both classes of passengers to the various service facilities by means of four east and west passageways extending across the full width of the station. These large public spaces will occupy only about one-half of the total interior space, the other half being taken up in part by auxiliary and mechanical facilities and, to a large extent, by shop space. In fact, special efforts have been made to devote a maximum proportion of the walls of the public spaces to show windows for these shops. In the case of the traction lobby, practically all of the side wall space not taken up by stairways to the track platform will consist of shop frontage.

The public space for the steam passengers will be divided into three units, an entrance lobby 154 ft. wide by 75 ft. long at the foot of the entrance ramps, a ticket lobby 103 ft. long by 91 ft. wide and a concourse 235 ft. long by 120 ft. wide. The latter will occupy the block between the extensions of Prospect avenue and



Looking Over the West Approach From the Tower—Site of the Station Tracks in the Foreground



Floor Plan of the Station at the Concourse Level and Showing Also the Ramp Connections With the Entrance on the Public Square

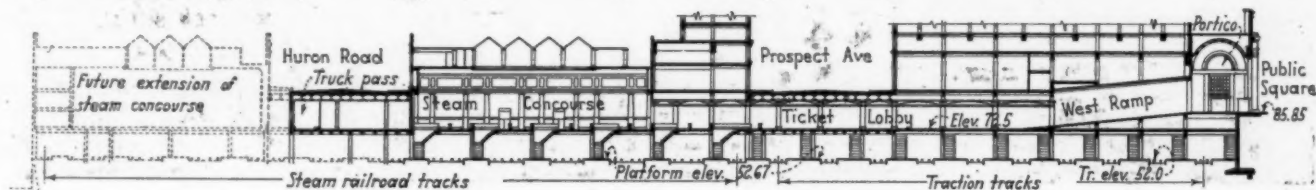
Huron road and will be the only part of the station in which the ceiling height will not be restricted to the headroom available below the street level. It will have a segmental arch ceiling and sky light with the spring line 38 ft. above the floor. Stairways to the steam road platforms will be located on the north and south axis of this concourse, while on its west side two sets of doorways will communicate with a waiting room 163 ft. by 55 ft. 2 in.

To the east and west of the main station structure, there will be large wings, that on the west to accommodate a large cab stand and the baggage room and that on the east, a restaurant and lunchroom, barber shop, employees' facilities and the mail and express rooms. Separate banks of elevators will connect the baggage room on the west and the mail and express space on the east, with the track platforms. An intercommunicating trucking passageway along the south side of the station wall will make both the west and east elevators accessible from the floor space in the two wings.

The Track Level

The station track layout calls for an eventual development of 34 tracks, the first 10 at the north to be used by the traction trains and the rest by the steam railway trains. However, the station building, as previously described, represents an initial construction which provides for the use of the 10 traction tracks and only the first 12 steam road tracks as station tracks to which access will be had from the concourse. For the present, Track 23 will be used as a run-around track and Tracks 24 to 34, inclusive, as a coach yard, although whenever traffic requirements demand, these tracks may be converted to station use by extending the station southward over them.

While the steam and traction tracks will be on the same level, the two groups of tracks will be entirely independent, except for a single crossover in each throat. The two sets of tracks differ also in that all of the traction tracks will be spaced from 32 to 34½ ft. apart so as to provide a platform on each side of each track,



Section Through West Steam Passenger Ramp and the Axis of the Station



The Portico of the Tower Building Will Serve as the Main Entrance to the Station

while the steam railway tracks will conform to the common paired arrangement with platforms between pairs of tracks, the track centers across the platforms to be 27- $\frac{3}{4}$ to 29 ft., except where the curves at each end of the station will necessitate a narrower spacing.

All of the tracks will connect with each approach except the four most northerly traction tracks which will lead into the station area from but one of the approaches. The platforms serving the traction tracks will range from 340 to 700 ft. in length, and those serving the steam tracks from 1230 ft. to 1630 ft.

The ultimate plan for the approaches calls for eight tracks, four traction and four steam railway tracks, with an additional steam railway track for a distance of about 1000 ft. in the west approach and 2000 ft. in the east approach adjacent to the west and east throats of the

station yard. However, in the initial development two traction tracks and two steam railway tracks will be omitted, although all overhead bridges required for grade separation will be constructed to accommodate the complete development.

The plan for the approaches is distinctive by reason of the provision for the complete elimination of grade crossings in effecting the junctions with the roads which are to use the station. The attainment of this result was naturally complicated by the need for segregating the two kinds of service, traction line and steam railway. Furthermore, at the end of the west approach, where the connection will be made with both the Nickel Plate and the Big Four, the ultimate development will make provision for the separation of the traffic on these two roads into three classifications, traction line, steam railway passenger and steam railway freight. On the east approach it is necessary to provide three overhead railway bridges for grade separations, one to carry the traction tracks over the steam railway tracks, and the other two to connect the Nickel Plate main line with its freight terminal along the south side of Broadway.

In so far as highway crossings are concerned, the project is one primarily of track depression, except where the Cuyahoga viaduct will carry the tracks of the west approach over the river flats for a distance of 3170 ft. between the east side of James street and the south side of Franklin avenue. This will be a high-level structure on concrete piers, of which the main feature is a 200-ft. three-truss through span over the river. The rest of the spans will be deck girders of a maximum length of 125 ft. The high-level crossing of the river was adopted to avoid a movable span for river navigation, but this advantage was obtained at the expense of heavy approach grades, namely 1.56 per cent from the north, and 1.45 per cent from the south. Except for these, the grades of the terminal tracks are limited to 0.75 per cent in so far as the steam railway tracks are concerned.

Construction Methods

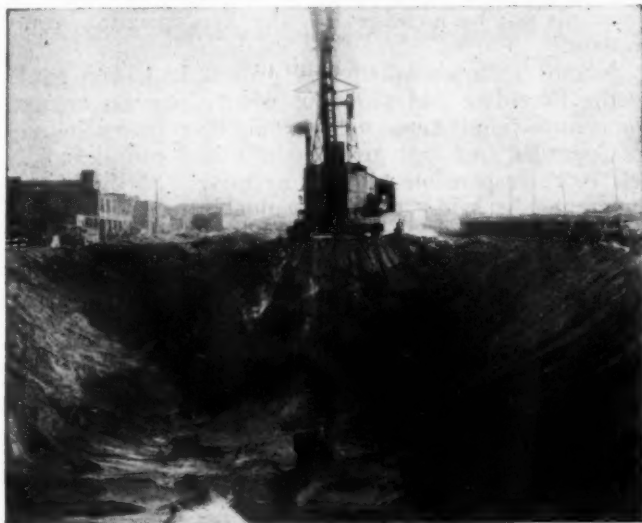
On the axis of the station the original ground surface sloped to the south from Elevation 90 at the square to Elevation 33 at Canal road, a distance of 900 ft. But with the tracks at Elevation 52.00, the quantities in excavation greatly exceeded those in embankments. From the east throat of the station yard to Central avenue, the east approach is in the hillside, but with the grade line below the ground level for the entire width of the road-



Looking Toward the Station Site from the West Approach, Piers for Cuyahoga Viaduct in the Foreground

bed, and adjacent to the east throat of the yard a portion of the station tracks must be carried under Ontario street. East of Central avenue to a point some distance beyond East Ninth street, the line is in a through cut that will be 40 ft. in depth for practically its entire length. Beyond this cut, the construction is largely in the nature of sidehill work, but with excavation largely in excess of embankment. The west approach beyond the end of the Cuyahoga viaduct consists largely of a through cut averaging 28 ft. in depth and extending through the blocks west of Columbus road from Franklin avenue to West Twenty-eighth street.

The total excavation for the project amounted to about 3,000,000 cu. yd. of which only 300,000 cu. yd. could be employed in embankments. The surplus was disposed of by train haul except where the grading had to be carried on in locations inaccessible to tracks.



Dragline Excavator at Work in a 40-ft. Cut on the East Approach

Dragline excavating machines were used to marked advantage to take out deep cuts in the interior of blocks before the streets could be disturbed at either end, but large-capacity shovels were also used extensively in the work.

In addition to provisions made to carry streets over tracks on the station site, eight viaduct structures are required to carry streets over the approaches. Retaining walls are an important feature of the construction, many of them being 40 ft. high, while the west side of Ontario street adjacent to the station is supported by a retaining wall 50 ft. high.

The development of the plans for the new terminal, as well as the prosecution of construction, has been under the direction of H. D. Jouett, chief engineer of the Cleveland Union Terminals Company. The architects for the station and other buildings are Graham, Anderson, Probst and White of Chicago. The contractors engaged on the building work are John Gill & Sons on the Tower building, the Aronberg-Fried Company, Inc., on the station building, and the Lundoff-Bicknell Company on the Medical Arts, Garage and Transportation buildings.

The grading for the site of the station was done by the Walsh Construction Company, Davenport, Iowa; that for the west approach by the Cleveland Excavating Company; and that for the east approach by the H. E. Culbertson Company of Cleveland. The concrete work has been handled under various contracts, among the

largest of which were those awarded to the Spencer, White and Prentiss Company, the Bates and Rogers Construction Company and the Hecker-Moon Construction Company.

Structural steel for the buildings, viaducts and bridges has been furnished by the American Bridge Company, the Mt. Vernon Bridge Company, the McClintic-Marshall Company and the Fort Pitt Bridge Works. The erection of structural steel for the buildings and viaducts is being done by the Bass Construction Company of Cleveland and the Strobel Steel Construction Company of Chicago. The erection of the bridge over the Cuyahoga Valley is being done by the American Bridge Company.

Commissioners Confirmed by the Senate

WASHINGTON, D. C.

THE Senate on December 22 confirmed, without objection the President's nominations of three members of the Interstate Commerce Commission for reappointment. Commissioners Clyde B. Aitchison and Claude R. Porter were reappointed for new seven-year terms following the expiration of their present terms on December 31 and Commissioner P. J. Farrell, who has been serving under a recess appointment, was appointed for a full term.

An executive session of only five minutes was required for the confirmation, following a favorable vote the day before by the committee on interstate commerce, but the committee had delayed consideration of the nominations for some time and Commissioner Aitchison was called before the committee for questioning on December 20 and 21 at the request of Senator Wheeler of Montana, who said he had received complaints that Mr. Aitchison had been negligent in his work and had delayed decisions, particularly in valuation cases.

Mr. Aitchison is well known as one of the most industrious members of the hard-working commission and it did not take him long to demonstrate that fact after he had been asked to furnish information regarding the state of his docket. Senator Wheeler finally withdrew his obstruction, but his question as to why the commission had not proceeded with the valuation of the telephone properties, under the 1913 valuation act, turned the hearing into a discussion which seemed of considerable interest to members of the committee as to the adequacy of the appropriations with which the commission has been compelled to get along under the economy policy of the federal government and the regime of the Budget bureau.

Mr. Aitchison said that, far from having attempted to obstruct the work of the commission, he, as well as others, had worked almost to the limit of human endurance in trying to keep up with the great volume of the commission's duties, and that the valuation bureau had been as busy as humanly possible in trying to complete its valuation work in compliance with the law. For several years after the war, he showed, the appropriations had been so reduced that it had been necessary to stop much of the valuation work several times in order to avoid incurring a deficit and it had been instructed by the Budget bureau to defer all but the most necessary features of the work in order to keep within its allotments and concentrate on completing the railroad valuations.

Members of the committee were inclined to criticize the commission for not having called to the attention of Congress more forcibly that it had not had enough money to comply with the directions given it by Congress in the valuation act, and that the Budget was "repealing" acts of Congress, but Mr. Aitchison pointed out that the Budget law prohibits a government officer from directly urging upon Congress an increased appropriation. He said that, although its situation had been painstakingly explained each year both to the Budget bureau and to the appropriation committees of Congress it was not until about 1924, after the commission had become seriously concerned at the way its work was being crippled, that members of the House committee asked the right kind of questions to bring out that it could not perform certain of the work committed to it under the appropriations recommended by the Budget. The valuation appropriation was then greatly increased, but with the understanding that it was to be used to complete the railroad valuation work, while deferring the valuation of telephone, pipe-line, express and electric railway properties.

Commissioner Aitchison also called attention to statements made in the commission's annual reports to Congress, although he said it had been criticized for what it said about its appropriations one year, and to its recommendation in the last report that it be allowed to delegate work to individual commissioners or subordinates. He said he had spent about half of his time for the last year and a half, including nights and Sundays, on the work required by the Hawes resolution directing the preparation of a digest of the commission's decisions and of court decisions relating to them.

Asked by Senator Wheeler what had been done by the commission to recapture excess incomes, Mr. Aitchison said the commission is in a sense marking time pending the decision of the O'Fallon case and that it hopes to get some light, if not from the court, then from Congress.

During President Harding's administration, Mr. Aitchison said, the Bureau of Efficiency and the Bureau of the Budget had both made a thorough study of

the work of the Bureau of Valuation and had advised that only the most vital parts of the work should be prosecuted, postponing the valuation of the telephone companies, etc., which required the services of a different kind of engineers and which were less necessary to the commission's regulation work than that of the steam roads. In the 1922 report the Commission told Congress that no substantial progress had been made on the telephone valuation. He said the practice was to submit estimates to the Budget bureau, which were discussed with it, after which the commission was told what its allotment was and asked to submit a revised estimate, including the subdivision of the available amount, with such letter as it might desire to submit. The situation was clearly set forth in such letters, he said, by the chairman of the commission. When the Budget bureau made its recommendations to Congress and the commission could do nothing more to answer the questions put by members of the appropriate committees.

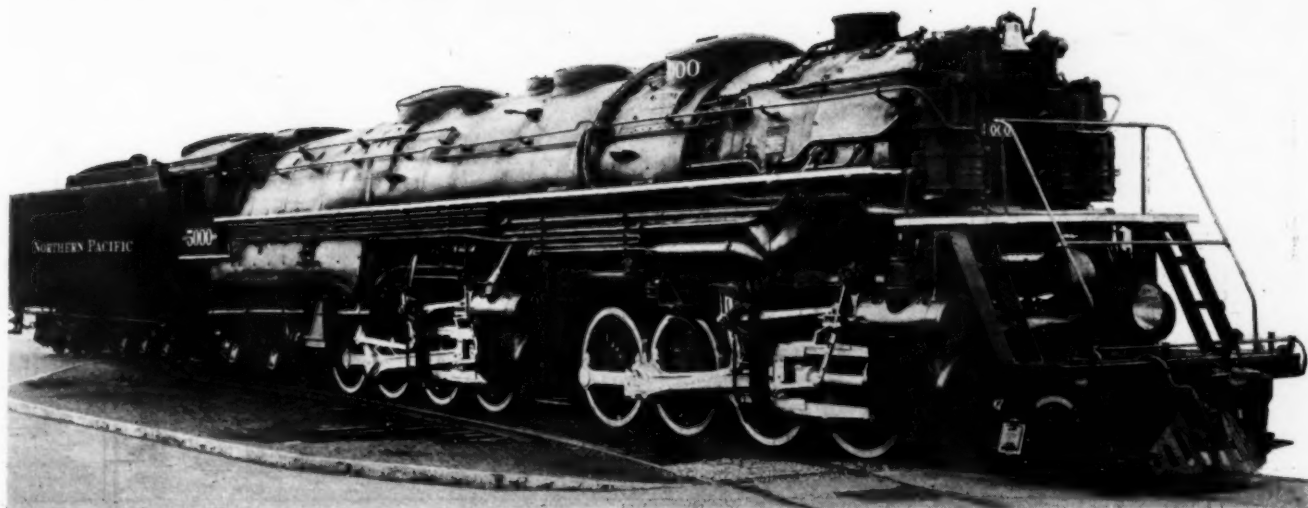
Senator Pittman asked if a protest had been made to the President and said that when Congress created the commission it supposed it would be responsible only to Congress, but that apparently it had considered itself more responsible to the Executive. "I think it is apparent," he said, "that the culpability, if any, lies with higher sources." Senator Fess remarked that perhaps it is the fault of Congress if it does not find out what the commission needs.

Commissioner Wheeler said he was frank to say that Mr. Aitchison had cleared up many matters and that the difficulty seems to have been largely because the commission has not had enough appropriations, but he thought the commission should have gone to the President and Congress and stated that the Budget bureau was interfering with work that had been assigned to it. Mr. Aitchison said he was not criticizing the President or the Budget; that after a national policy of economy had been proclaimed the commission had attempted to co-operate, but that it could not do certain things without sufficient appropriations for them.

* * * *



On the Colorado & Southern



Single-expansion Articulated Locomotive Built for the Northern Pacific by the American Locomotive Company

World's Largest Locomotive Built for the Northern Pacific

To be operated in the "Bad Lands" of North Dakota and Montana—Total weight of 1,116,000 lb.

THE American Locomotive Company has just completed a single-expansion articulated 2-8-8-4 type locomotive for the Northern Pacific which is the largest steam locomotive in the world. The total weight of this locomotive, which has been named the "Yellowstone" type, on the Northern Pacific, is 1,116,000 lb., of which 715,000 lb. is the weight of the engine and 401,000 lb., the weight of the tender. Of the engine weight, 554,000 lb. is carried on the drivers, 45,500 lb. on the engine truck and 115,500 lb. on the trailer truck. It develops a tractive force at 70 per cent cut-off of 139,900 lb. and, with the additional tractive force of the booster at starting of 13,400 lb., gives a combined tractive force of 153,300 lb.

All four cylinders have the same diameter and stroke, 26 in. by 32 in., and the boiler (believed to be the largest steam locomotive boiler in the world) operates at a pressure of 250 lb. The driving wheels are 63 in. in diameter. The factor of adhesion for the locomotive is 3.94. The overall length between couplers, engine and tender, is 124 ft. 11½ in.

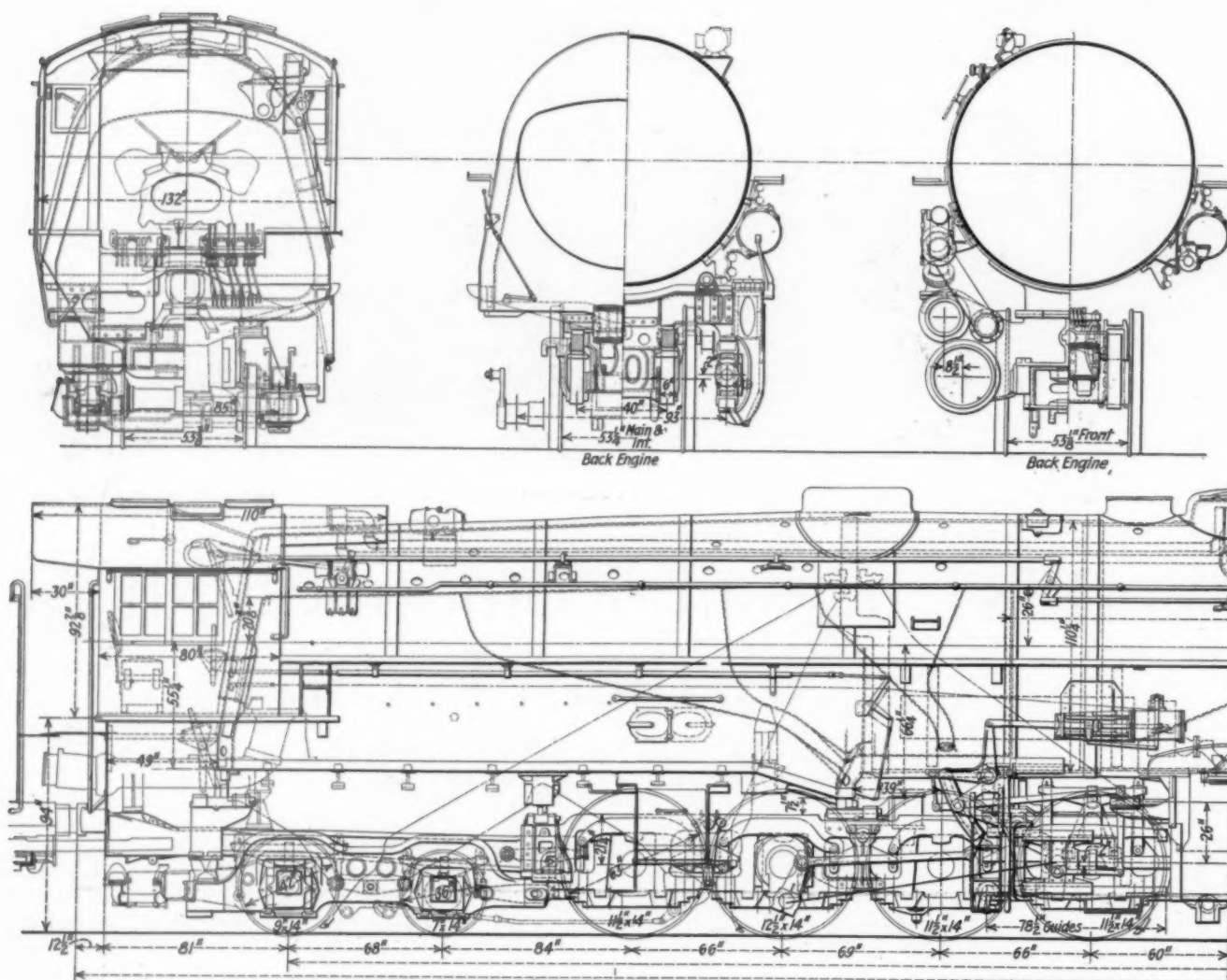
A comparison of the new 2-8-8-4 type locomotives of the Northern Pacific with others that have been built in recent years, shows that it is the heaviest and longest locomotive ever built. However, two other locomotives have been built which exceed the new Northern Pacific locomotive in the tractive force developed. These are, the Erie compound triplex (2-8-8-8-2 type) locomotive, which has a tractive force rating of 160,000 lb., and the Virginian Mallet articulated (2-10-10-2 type) locomotive, which was rated at 176,600 lb. when working simple and 147,200 lb. when working compound. Two other locomotives that rate close to the Northern Pacific locomotive in tractive force are the Norfolk & Western Mallet articulated (2-8-8-2 type) locomotive, which is rated at 135,600 lb. when oper-

ating simple, and 104,300 lb. when operating compound and the Pennsylvania single-expansion articulated (2-8-8-0 type) locomotive, which has a tractive force rating of 135,600 lb. None of these locomotives approach the Northern Pacific in overall length, although several have longer combined driving-wheel bases.

The extreme weight and overall length of this locomotive was due to complications encountered in the design of the firebox and boiler. The railroad desired to use eastern Montana sub-bituminous coal from an open-pit mine, owned by the railroad company at Colstrip, Mont. This sub-bituminous coal, while comparatively low in heat units, burns freely. The coal from this district, as received from the mine, varies between 24.6 and 30 per cent moisture, 11.9 and 14 per cent ash, with a heating value of from 6,208 to about 7,000 B.t.u. When dried, the heating value is increased to about 10,000 B.t.u. In order to obtain the required boiler horsepower from the heat developed by this coal, it was necessary to design the largest firebox and boiler ever applied to a steam locomotive.

To Perform the Work of Two Mikado Locomotives

The new Northern Pacific 2-8-8-4 type locomotive is intended for experimental operation over the 216-mile district of the Northern Pacific from Mandan, N. D., to Glendive, Mont., across the so-called "Bad Lands" of western North Dakota and eastern Montana. This district has maximum grades of 1.1 per cent. The location and extent of the grades are such that helper districts are not practicable. Consequently large booster-equipped 2-8-2 locomotives with a tractive force of 63,000 lb. can haul but 2,225 tons between these points, which means that freight trains arriving at Glendive from the west with 4,000 tons, have to be



Cross Section and Elevation of the

split into practically two trains for movement from Glendive to Mandan. The same condition obtains westwardly at Mandan.

The relocation and revision of this 216-mile district has been the subject of many surveys during past years. These surveys developed that it would be extremely expensive to revise or relocate this line to provide a district having four-or five-tenths per cent ruling grades. With the abandonment of this idea, the mechanical engineers of the Northern Pacific and the American Locomotive Company set out to design a locomotive which would take through a 4,000-ton train in either direction over this district.

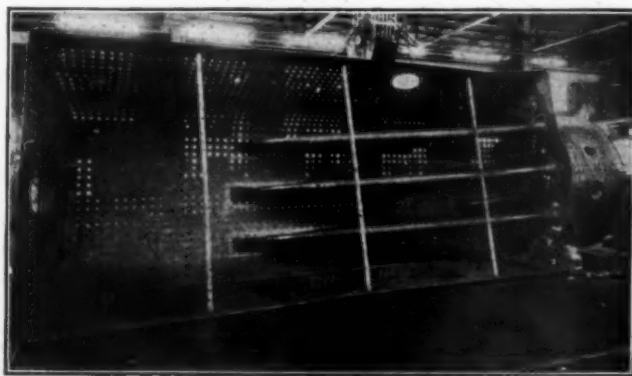
The contract with the American Locomotive Company contemplates the purchase of but one locomotive because of the fact that no experience data is yet available as to stoking capacity and other mechanical features in locomotives of these proportions. It is believed, however, that the locomotive will be successful in reducing by 50 per cent, the train miles necessary to move freight traffic over this district. If it is unsuccessful, it can be assigned as a helper in mountain territory.

Boiler Weighs 165,000 lb.

This locomotive is equipped with a conical boiler built for a working pressure of 250 lb. per sq. in. The boiler is built with a factor of safety of 4.5. The grate area is 182 sq. ft., the total evaporating heating surface is 7,673 sq. ft. and the total superheating surface

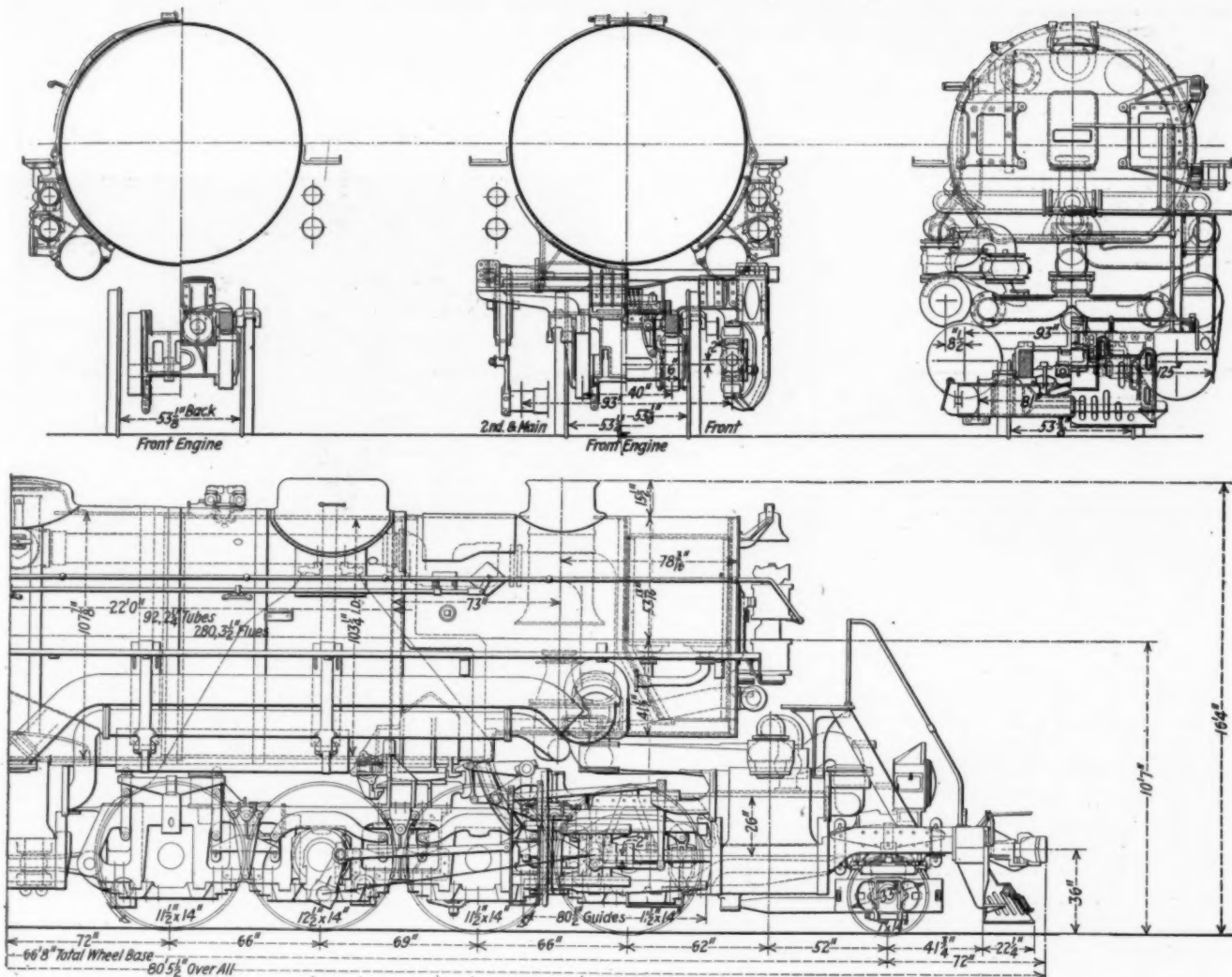
is 3,219 sq. ft. The estimated weight of the boiler alone is 165,000 lb. More than 20,000 holes were drilled in the boiler during its construction. It is equipped with five Nicholson Thermic syphons and there are 5,153 staybolts and 2,527 welded sleeves used in the firebox assembly.

The total length of the boiler is 63 ft. 8 3/4 in., while



Inside of the Firebox Showing the Location of the Five Syphons

the firebox and combustion chamber combined are 28 ft. 6 5/8 in. long. At the front end the boiler has an inside diameter of 103 1/4 in. and at the throat connection, an outside diameter of 110 1/4 in. The firebox has



Northern Pacific 2-8-8-4 Type Locomotive

a length inside the sheets of $266\frac{1}{8}$ in. and a width of $114\frac{1}{4}$ in. with a water space at the front of 7 in., at the back 6 in., and at the sides, 6 in. The combustion chamber has a length of $72\frac{1}{2}$ in. The inside firebox is in three sheets, the crown and side sheets being

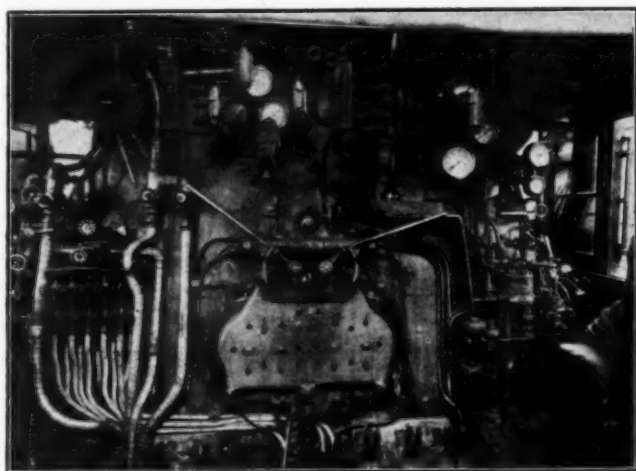
Three of the five syphons are located in the firebox and two in the combustion chamber.

Coal is fed to the firebox with a standard Type B stoker, guaranteed to deliver 40,000 lb. of coal per hour. The ash pan has a Wilson bottom, with the railroad company's standard dumping arrangement.

Firebox Has Three Doors

The unusual length of the grates—22 ft. 3 in.—made it necessary to provide some additional means for manipulating a rake in the firebox, when cleaning the grate, other than through the fire door. Two 9-in. by 14-in. openings, located on opposite sides of the firebox, are provided to meet this exigency. They are located about 16 ft. from the rear of the firebox, so that the fire cleaner is able to rake any part of the grate area from the fire door or either of the two side openings, with the ordinary style of fire-hook. Folding platforms are located underneath each of the side firebox openings.

The firebox is supported at three points on each side, one under the front mud ring, one under the rear mud ring, and one near the middle at each side of the mud ring. All of these supports are of the sliding plate type and are fitted with renewable liners. Owing to the width of the box, the middle supports are attached to a steel cross-member of deep box section which extends across under the grate from one side of the mud ring to the other and forms the ridge separation between



Interior of the Cab

joined by arc welding. These sheets are also welded to the inside throat sheet and the one-piece combustion chamber is welded to the crown and inside throat sheet.

Table of Dimensions, Weights and Proportions of the Northern Pacific Single-Expansion Articulated Locomotive

Railroad	Northern Pacific
Type of locomotive	2-8-8-4
Service	Freight
Cylinders, diameter and stroke	20 in. by 32 in.
Valve gear, type	Walschaert
Valves, piston type, size	14 in.
Maximum travel	7½ in.
Outside lap	1½ in.
Exhaust clearance	Line and line
Lead in full gear	3/16 in.
Maximum cut-off in full gear, per cent.	70
Weights in working order:	
On drivers	554,000 lb.
On front truck	45,500 lb.
On trailer truck, front axle	55,000 lb.
On trailer truck, rear axle	60,500 lb.
Total engine	715,000 lb.
Tender	401,000 lb.
Total engine and tender	1,116,000 lb.
Wheel bases:	
Driving	44 ft. 6 in.
Rigid	16 ft. 9 in.
Total engine	66 ft. 8 in.
Total engine and tender	99 ft. 8 in.
Wheels, diameter outside tires:	
Driving	63 in.
Front truck	33 in.
Trailer truck, front	36 in.
Trailer truck, rear	42 in.
Journals, diameter and length:	
Driving, main	12½ in. by 14 in.
Driving, others	11½ in. by 14 in.
Front truck	7 in. by 14 in.
Trailer truck, front	7 in. by 14 in.
Trailer truck, rear	9 in. by 14 in.
Boiler:	
Type	Straight top
Steam pressure	250 lb. per sq. in.
Fuel, kind	"Rosebud" sub-bituminous
Diameter, first ring, inside	103¼ in.
Diameter, back ring, outside	110¼ in.
Firebox, length and width	266¼ in. by 114¼ in.
Tubes, number and diameter	92—2¼ in.
Flues, number and diameter	280—3½ in.
Combustion chamber, length	72½ in.
Length over tube sheets	22 ft.
Grate area	182 sq. ft.
Heating surfaces:	
Firebox and combustion chamber	610 sq. ft.
Syphons	262 sq. ft.
Tubes and flues	6,801 sq. ft.
Total evaporative	7,673 sq. ft.
Superheating	3,219 sq. ft.
Comb. evap. and superheat	10,892 sq. ft.
Special equipment:	
Superheater	Type E
Feedwater heater	Coffin
Stoker	Standard, Type B
Syphons	Nicholson
Booster	Franklin trailer
Tender:	
Water capacity	21,200 gal.
Fuel capacity	27 ton
Wheels, diameter	37 in.
Journals, diameter and length	7 in. by 14 in.
General data estimated:	
Rated tractive force, 70 per cent.	139,900 lb.
Booster tractive force, 50 per cent.	13,400 lb.
Combined tractive force	153,300 lb.

front and rear hoppers of the ash pan. The supports under the rear of the mud ring are directly over the lateral centering and bearing device by which a portion of the weight at the rear end of the frame is transmitted to the rear end of the four-wheel trailing truck.

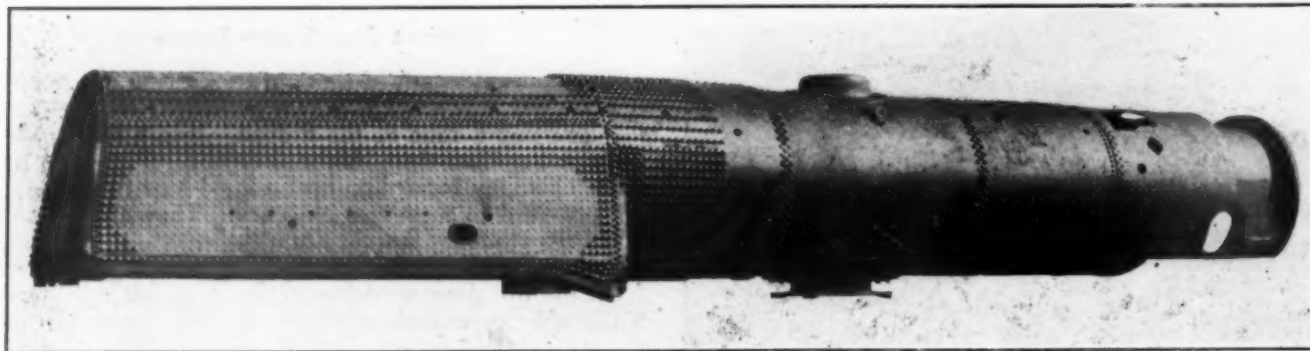
The construction of the smokebox for this boiler en-



Side Door Openings Into the Firebox Are Provided to Facilitate Cleaning the Grate

tailed the formation of cutouts in the plate at the front end to accommodate the Coffin feedwater heater, which was applied. In building this part of the boiler, accuracy was essential so that when the heater was dropped in place, it would fit perfectly with ⅛-in. clearance to allow for expansion. The smokebox has a length of 146½ in. and a diameter of 106⅞ in. and is made of ⅝-in. plate.

The Coffin feedwater heater installed on this loco-

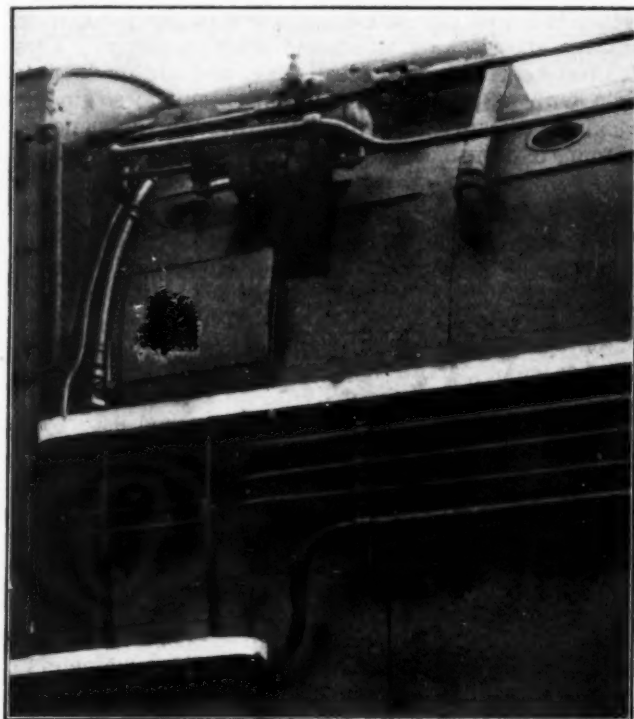


The Boiler

Weight proportions:	
Weight on drivers ÷ total weight engine, per cent.	77.4
Weight on drivers ÷ tractive force	3.94
Total weight, engine ÷ comb. heat. surface	65.8
Boiler proportions:	
Tractive force ÷ comb. heat. surface	12.85
Tractive force × dia. drivers ÷ comb. heat. surface	742
Firebox heat. surface ÷ grate area	3.35
Firebox heat. surface, per cent of evap. heat. surface	7.95
Superheat. surface, per cent of evap. heat. surface	41.9

otive, consists of two size B heaters welded together, so as to form the same uniformity of steam passage as in the single size B unit, but with double its heat transfer capacity. No changes were made in the design of the castings, tube spacers, handhole frames, etc. It is said, that this heater has the largest amount of heating

surface of any feedwater heater ever placed on a steam locomotive. Two standard Coffin centrifugal pumps, having a combined capacity of 100,000 lb. of water per hour, are located one on the right and one on the left



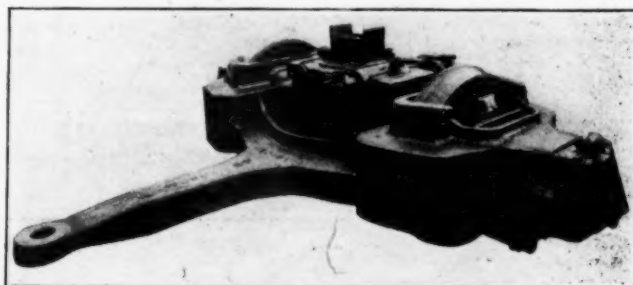
View of the Power Throttle

side of the locomotive just back of the rear drivers. Separate control is provided for each pump. With this arrangement, it will be possible to operate one pump a large part of the time at maximum capacity and the

other pump may be used only to provide for peakload conditions and to serve as a standby unit. In addition to these two pumps, the locomotive is equipped with two emergency Hancock injectors, having a pumping capacity of 104,000 lb. per hour. The boiler is designed to evaporate 120,000 lb. of water per hour.

Steam Piping a Feature of the Design

The arrangement and design of steam piping is undoubtedly one of the features in the design of this locomotive. Considering the amount of piping used, very little appears above the running board outside of the jacket covering the boiler. Feed-pump, water and steam

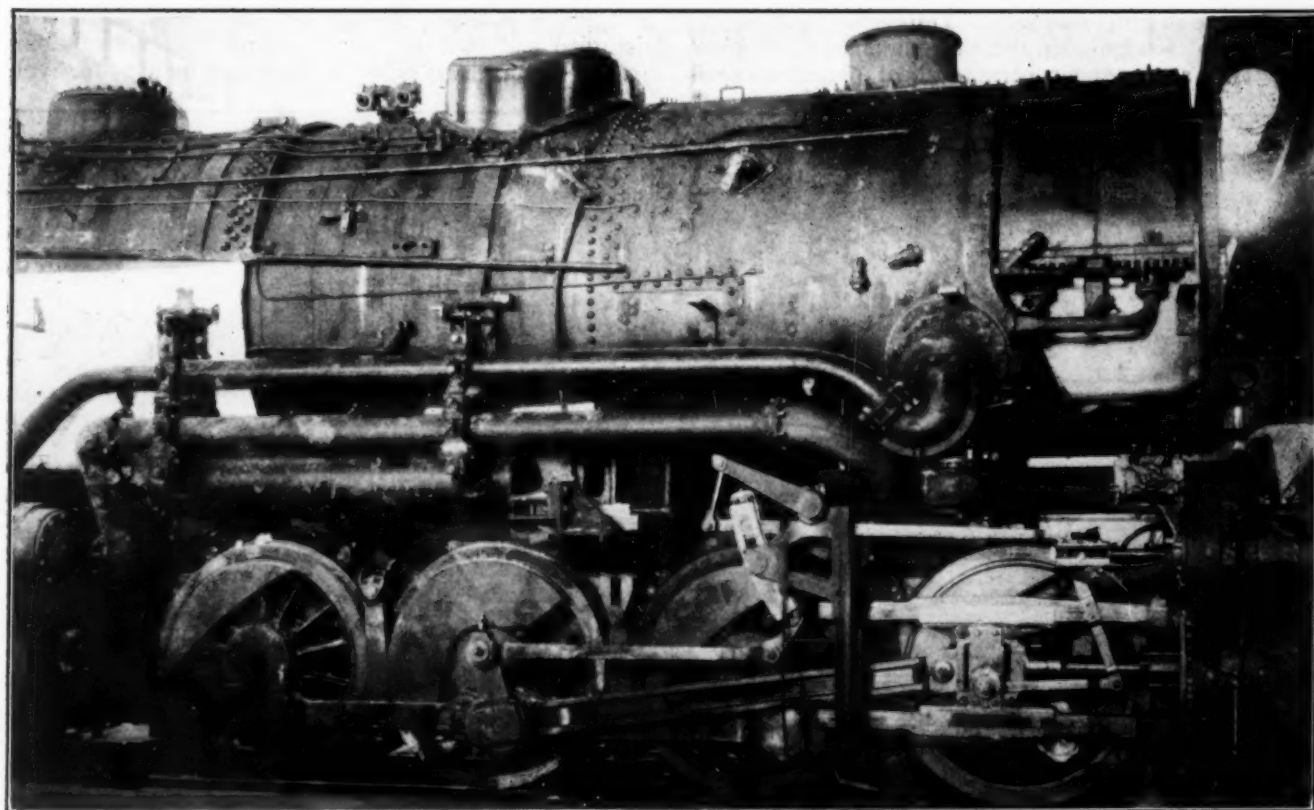


The Engine Truck

connections are the only pipes laid over the jacket between the cab and the smoke box. The whistle, superheater safety valve and pipe connections, and the exhaust pipe from the air compressor, are secured over the smoke box. The remaining piping is grouped together, as shown in the side view of the locomotive, to provide a maximum of accessibility together with good appearance.

Novel Features

A number of novel features have been incorporated in the design of the pipes used for conducting the steam to



View of the Locomotive in the Erecting Shop Showing the Steam Pipe and Feed Water Heater Installation

the cylinders. The steam pipes to the cylinders of the rear engine are made of seamless steel tubing. They are not equipped with slip joints as has been the customary practice on locomotives of this type. Provision has been made for expansion by installing the pipe slightly buckled upward at the center. The independent pipes to each

sure in all four cylinders, which is of considerable assistance in reducing strain and wear on the side connections and journals.

The steam supply pipes to the front cylinders are provided with cast-steel flexible joints of a design to secure balanced pressure on all parts of the joint, which relieves the packing of considerable pressure. These flexible joints are of the ball type, and are made steam tight with a special type of Johns-Manville steam pipe packing. Steam enters the joint through the same size opening as the steam pipe itself and is diverted at right angles by means of a solid diaphragm, cast integral with the joint itself. The top of this diaphragm is designed with a concave surface, which extends from the center to the outer edge of the outgoing ports. This type of concave construction distributes the pressure exerted by the steam over a large area. The space underneath this diaphragm is filled with magnesia cement. The steam pipes extending above the table plate inside the smokebox are also encased in asbestos.

Another interesting feature is the method used by the designers for securing the piping and running boards to the locomotive. Brackets of cast steel are located directly opposite each other on both sides of the boiler, and are held in place by means of a forged steel strap which extends over the top of the boiler. Several of these brackets and supports are shown in the views of the locomotive taken during the process of erection. The brackets are cast in two pieces, the piece next to the boiler is designed with recesses or cavities to suit the various diameters of pipe used, while the outside piece serves as a clamp to hold the pipes in position. The top of the bracket is shaped to form a support for the running board. Irving subway flooring is used on the running boards and steps.

Power-Operated Multiple Throttle

Steam is admitted to the cylinders by means of an American multiple throttle which is power-operated. This is the first installation of a power throttle device on a steam locomotive. The device is air-operated, and was designed and built by the American Locomotive Company. Steam distribution is controlled by a 14-in. Wal-



Front View of the Northern Pacific 2-8-8-4 Type Locomotive

cylinder are so proportioned as to afford an equal supply of steam to each cylinder and thus eliminate wire drawing. This arrangement permits equal operating pres-



The Running Gear, Showing the Booster and Rear Engine Connections

schaert gear, having a maximum travel of $7\frac{1}{2}$ in. It is designed for 70 per cent cut-off and is controlled by an Alco power reverse gear.

The crosshead guides are of an improved design, in which has been incorporated a single bearing feature, together with provision for a sliding fit designed to prevent shearing of the guide bolts. The main block is of high carbon steel with a brass wearing surface, which is grooved for Alemite lubrication. This form of lubrication is also used for a number of other bearings, such as the valve motion and equalizer details.

The engine truck frame and radius bar are in a single steel casting which also includes the journal boxes. It will be noted from the illustration of the engine truck that outside bearings are used, and the journal boxes are bolted to the bearing portion of this casting. The wheels of the engine truck are 33 in. in diameter and have 7-in. by 14-in. journals.

The front drivers of each engine unit are equipped with the Alco lateral motion device. The main drivers have $12\frac{1}{2}$ -in. by 14-in. journals and the remaining drivers, $11\frac{1}{2}$ -in. by 14-in. All driving axles are hollow bored. Grisco boxes are applied to the bearings of the main and intermediate drivers of both engines. The hinged articulated joint is of the same design as that used on the standard U. S. R. A. articulated locomotives.

The Franklin booster operates at 50 per cent cut-off. It provides power to the rear wheels of the four-wheel trailing truck, the frame of which is of Commonwealth design. The rear trailer wheels are 42 in. in diameter, with 9-in. by 14-in. journals and carry a load of 60,500 lb. This weight gives a factor of adhesion for the booster of 4.52. The booster exhaust pipe extends back through the tender to the rear of the coal board.

The Tender

The tender has a capacity for 21,200 gal. of water and 27 tons of coal, and is of welded construction throughout. The water bottom tender frame and six-wheel equalizer trucks are of Commonwealth design. The wheels are 37-in. in diameter, with 7-in. by 14-in. journals. The coal bunker is equipped with a Standard coal pusher.

I. C. C. Finds Western Lines Entitled to Better Divisions

WASHINGTON, D. C.

A PLAN designed to give increased divisions to the western trunk lines on traffic to and from the Southwest is prescribed by the Interstate Commerce Commission in a report, by Commissioner Eastman, made public on December 22 on the investigation instituted by the commission into the propriety of the divisions of the joint rates of the principal carriers in the Western and Mountain-Pacific groups.

This report deals only with the divisions in the aggregate north and south of Kansas City, and St. Louis, Mo., and East St. Louis, Cairo, Gale and Thebes, Ill., of joint rates between points in western trunk line territory generally east of the Missouri river and points in the Southwest. The western trunk lines, referred to in the report as complainants, actively sought increases in their divisions, which have been on numerous bases, on the basis of a mileage pro-rate, subject to certain exceptions, which it was estimated would amount to between two and two-and-a-half millions a year, while the Southwestern lines, referred to as defendants, in the main fight to hold what they have. It is unofficially

estimated that the plan recommended would give the western trunk lines perhaps half as much. In the aggregate, according to the report, the present divisions yield the southwestern lines considerably more than they would receive under a mileage pro-rate.

Commissioner Woodlock, in a concurring opinion, expressed some hesitancy at sweeping out of existence at one blow a multitude of heterogeneous division bases and replacing them by a rate-pro-rate basis, which he said must be regarded as experimental. Commissioner Brainerd dissented, saying the evidence was insufficient to condemn the existing divisions in the aggregate and indicating that some of the evidence would lead to the conclusion that an increase of from 35 to 40 per cent in rates in western trunk line territory is justified.

The conclusions expressed in the majority report by Commissioner Eastman are in part as follows:

Obviously it is impossible to apply any mathematical formula which will operate with precision, and it is necessary to be guided by general judgment after considering and weighing as well as we can the evidence before us. The greatest obstacle in securing a satisfactory record has been the difficulty of determining relative costs of service so far as the traffic in question is concerned. It has apparently not been practicable to segregate this traffic for this purpose from the other traffic in the two groups, nor indeed to separate traffic wholly from operations beyond group boundaries. Summarizing the evidence, so far as salient facts are concerned, it is shown:

(1) That the present divisions were established, for the most part, about 35 years ago and conform to no logical or consistent basis. They are considerably more favorable to complainants in the case of oil and lumber than in the case of other forms of traffic.

(2) That transportation conditions have changed materially since most of the divisions were established, and that the change has benefited defendants more than it has complainants. The trend is distinctly in favor of defendants.

(3) That transportation conditions are nevertheless more favorable in western trunk-line territory than in the Southwest, more particularly with reference to density of traffic. However, conditions vary in the different parts of western trunk-line territory, and appear on this record to be considerably more favorable in Illinois than in the other States included in that region. They grow continually less favorable from east to west.

(4) That the difference in transportation conditions is reflected in the level of rates in the two territories. It is not possible from the record to determine just what the difference is in average levels, but it appears to be greater than the difference in average transportation conditions. This is particularly true of the class rates, which have apparently been constructed upon somewhat different theories in the two territories, and are in process of revision in western trunk-line territory.

(5) That the cost of operation per ton-mile, including all expenses, charges, and a fair return on investment, in all probability does not average as much as 20 per cent higher in the southwestern than in the western trunk-line group.

(6) That the financial condition of complainants is not on the whole as good as that of defendants.

The divisions here in issue are dealt with of record on a group basis. They are, in other words, the divisions "in the aggregate" north and south of the gateways named, and no question is raised with respect to the divisions of individual carriers. In our opinion the divisions in issue are not just, reasonable, and equitable. Many of them are unjust to complainants, and some of them are unjust to defendants. To cure their defects, they must be readjusted upon a consistent basis which will as nearly as practicable reflect, in the light of all the facts of record, the differing conditions in the two territories. Such a readjustment will, we think, be accomplished if the joint rates are divided, south and north of the gateways, in proportion to assumed rates for the two hauls, the assumed rate for the distance covered by the haul south of the gateway to be the first-class rate for that distance under the present southwestern scale, and the assumed rate for the distance covered by the haul north of the gateway to be 80 per cent of the first-class rate for that distance under the same scale in the case of traffic to or from points in Illinois and Wisconsin and 87 per cent in the case of traffic to or from other points in the western trunk-line group. Where differentials are added in either territory in making the rates, such differentials should be deducted before prorating and added to the divisions of the lines in the region in which they apply. In the case of traffic to or from points in official territory east of the Indiana-Illinois

State line, the assumed rate used in determining complainants' proportion of the revenue accruing to the western lines should be 80 per cent of the first-class rate under the southwestern scale for the distance covered by complainants' haul minus 10 cents because of the absence of originating or delivering service.

It should be understood that in the construction of these bases for the readjustment of the divisions we have not attempted to differentiate closely between the various parts of western trunk-line territory. The evidence indicates that transportation conditions in Illinois are quite different from those in the remainder of the territory, and this difference is recognized in the bases. Wisconsin is included with Illinois because the traffic between the Southwest and Wisconsin very largely passes through Illinois. Complexity in the bases is undesirable, and in our judgment the differentiation provided for between two portions of western trunk-line territory will produce sufficiently accurate and reasonable results in the determination of the divisions of the joint rates in question. The assumed rates used in the prorate formulas are intended to reflect general differences in conditions, and are not to be regarded as a necessary measure of the class rates which should be maintained in the two territories or of the rates on any particular commodity. There may, for example, be reasons for a different distribution of the transportation burden among classes and commodities in one territory than in the other, and in the construction of such rates, also, a closer differentiation between various parts of the same territory may be desirable.

After consideration of all the facts of record, therefore, we find that in the case of the joint rates applying on freight traffic via the gateways of Kansas City and St. Louis, Mo., and East St. Louis, Cairo, Gale, and Thebes, Ill., between points in the Southwest, as defined in this proceeding, and points in the States of Illinois and Wisconsin, subject to the exceptions noted below, the just, reasonable, and equitable divisions in the aggregate, south and north of said gateways, will for the future be determined by dividing said joint rates in proportion to assumed rates for the two hauls, the assumed rate for the distance covered by the haul south of the gateway to be the first-class rate for that distance under the present southwestern scale and the assumed rate for the distance covered by the haul north of the gateway to be 80 per cent of the first-class rate for that distance under the same scale. We also find that in the case of the joint rates applying on freight traffic via the gateways named above between points in the Southwest, as defined in this proceeding, and points in the remainder of western trunk-line territory, as defined in this proceeding, subject to the exceptions noted below, the just, reasonable and equitable divisions in the aggregate, south and north of said gateways, will

for the future be determined by dividing said joint rates in proportion to assumed rates for the two hauls, the assumed rate for the distance covered by the haul south of the gateway to be the first-class rate for that distance under the present southwestern scale and the assumed rate for the distance covered by the haul north of the gateway to be 87 per cent of the first-class rate for that distance under the same scale. We further find that in the case of joint rates applying on freight traffic via the gateways named above, between points in the Southwest, as defined in this proceeding, and points in the territory east of the Illinois-Indiana State line and on and north of the Ohio River and the line formed by the Chesapeake & Ohio, Norfolk & Western, and Virginian railways between Cincinnati, Ohio, and Norfolk, Va., subject to the exceptions noted below, the just, reasonable, and equitable divisions of the shares accruing to the western lines will for the future be determined by dividing said shares in proportion to assumed rates for the two hauls, the assumed rate for the distance covered by the haul south of the gateway to be the first-class rate for that distance under the present southwestern scale and the assumed rate for the distance covered by the haul of the western trunk lines north of the gateway to be 80 per cent of the first-class rate for that distance under the same scale, minus 10 cents. Where differentials are used in the construction of the joint rates, such differentials should be deducted before prorating and added to the divisions accruing to the carriers in the regions where they apply. There are excepted from the above finding divisions of joint rates to and from points in western Louisiana within the switching limits of New Orleans and also divisions of joint rates applying via Kansas City to and from points in Oklahoma on the Santa Fe, the Rock Island, and the Missouri Pacific which were included within the agreement as to trans-Missouri divisions which is described in the first part of this report.

Instead of applying the basic prorate formulas described in the above findings to individual joint rates and routes, both territories may be divided into groups and percentages determined for the division of all joint rates between particular groups by applying the appropriate prorate formula to fair average distances between such groups and the gateways named in the findings. In view of the desirability, for purposes of simplicity and convenience, of the use of such groups in working out the readjustment of the divisions, no order will for the present be entered, but respondents will be given 60 days from the date of service of this report to agree upon an adjustment substantially in accord with the above findings. Full reports should be made to us at the end of this period, indicating what negotiations have been had in this connection and what the results have been.

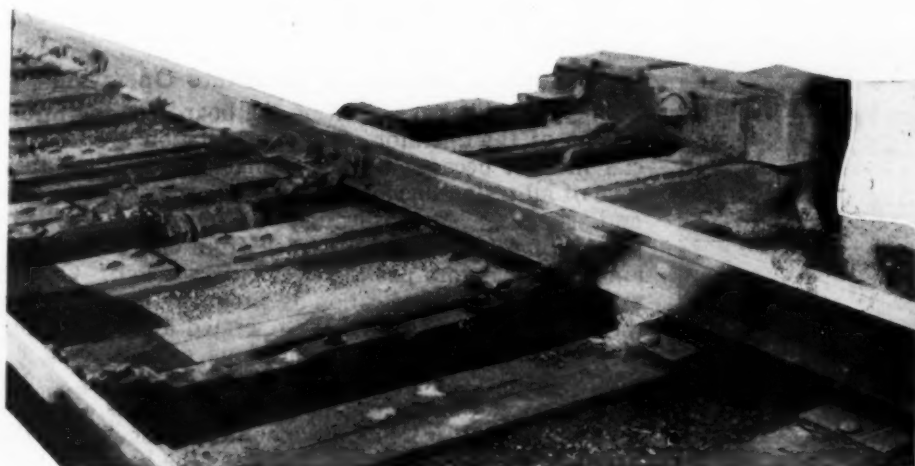
* * * *



Solid Cotton Train on the Gulf, Mobile & Northern at Woodland, Miss.

Burlington Installs Centralized Control for Ends of Double Track

Trains directed by signal indication and six operators relieved in system involving two switches



A Northbound Train Leaving Double Track

The Switches Are Controlled Remotely and Are Operated by Electric Switch Machines

THE Chicago, Burlington & Quincy has installed the centralized control system for the control of and operation of the switches and derails at the two ends of double track and for the signaling on the two miles of single track between switches located at Gibbs, Ill., and Arenzville. The control system is that of the Union Switch & Signal Company, using only two control wires throughout the territory and extending two miles further south to Concord, Ill., where the control board is located in the telegraph office. By means of this new installation, train movements are now directed over the single track by signal indication without written orders, and this change, together with the operation of the switches, has permitted the elimination of one operator on each trick at each end of double track, or a total of six men.

This section from Gibbs to Arenzville is a part of the Beardstown division of the Burlington, which extends from Galesburg, Ill., to East St. Louis, with a branch from Concord through Herrin, Ill., to Metropolis, Ill., and Paducah, Ky. The traffic includes three passenger trains and about four freight trains each way daily. During the winter season there are in addition about ten extra freight trains each way daily. The major portion of the northbound traffic consists of coal. At the time the second track was built on this line about

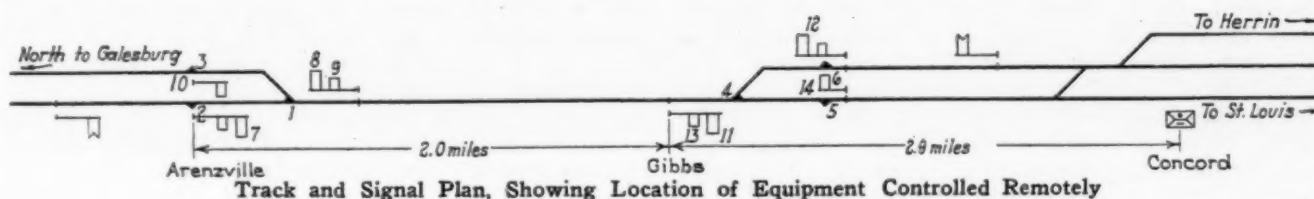
20 years ago, the second track was not added to the two-mile section from Arenzville to Gibbs because a complete and expensive revision of grades would have been required to secure a good line. Furthermore, the grade is descending northbound, which is the direction of heavy tonnage. The Class M4 locomotive, which hauls about one hundred cars of coal, totaling 5,000 tons northbound down the grade, can handle the maximum operating limit of empty cars up the hill.

Train Movements Are Directed by

Signal Indication

The functions controlled include the two switches, four derails, four two-arm high signals and two dwarf signals. The distant signals are automatic, being controlled from the home signal and by the intervening track circuits.

Under the former method of operation, trains were required to pick up train orders directing movements over the single track between Gibbs and Arenzville. Under the new system, the dispatcher keeps the operator at Concord informed as to the approach of trains, and issues instructions as to which shall be given preference. Track circuits are provided so that trains on double track approaching the single track are announced automatically by an annunciator bell and by



a light on the board in the operator's office at Concord. The machine has four small levers, two at the top for the control of the switches and the two below for the signals.

For example, when the operator sees the light on the track diagram, and hears the bell indicating that a southbound train is approaching Arenzville, he throws the upper left lever marked *A* from the central position to the right *R*. The indication light above the central position is then extinguished and after switch 1 has completed its movement and is locked, and derail 2 has been lined for a through movement, and derail 3 set for derailing, and indication is sent in to the operator's machine, which lights the indication lamp above the *R* position of the switch lever *A*. The upper right

from the *S* position to the vertical position at the center, which holds all of the signals at Arenzville at the stop position, and this fact is checked and indicated to the operator by the center light above the central position of the lever.

The next action on the part of the operator is to move the lower right-hand lever marked *D*, controlling the signals at Gibbs, to the *S* position, which causes signal 11 to move to the proceed position, thus authorizing the train to proceed through Gibbs toward Concord. The lower arm, signal 13, is provided in case it is desired that a southbound train shall run on the left-hand main from Gibbs to Concord. In case switch 4 is lined to divert a southbound train to the northbound track, signal 13 will move to the proceed position, instead of signal 11, when the signal lever *D* is moved.

Complete Indications Facilitate Operation

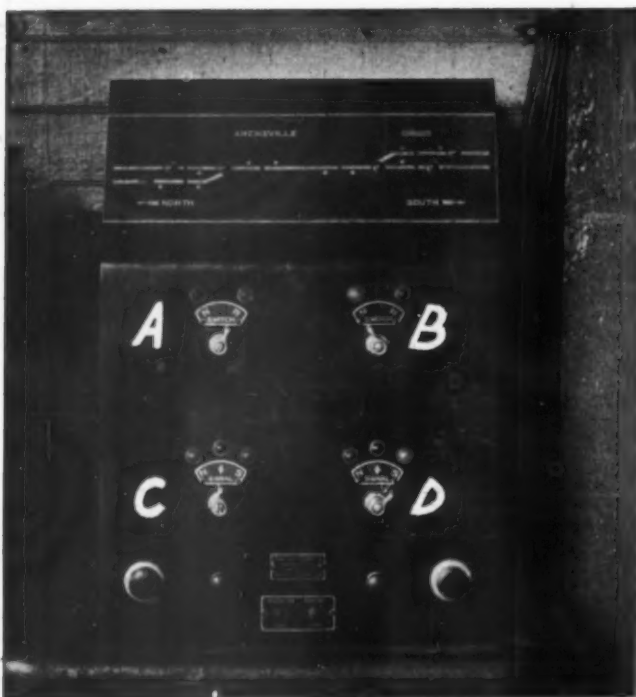
The indications provided on the board for the information of the operator on this installation are of special interest because of the complete indication they give of all train movements and the position of switches and signals. An indication is given of the approach of a train on either track from either direction, and also of a train passing over either switch. On the switch levers, an indication is provided to show that the derails and switches have operated and are locked in each position. Three indications are provided on the signal levers, one for each direction, and a center light to show that all signals are at stop. As an additional feature, two lights are mounted, as shown, at the center of the operator's machine near the bottom. One of these lights flashes to repeat the code of indications coming into the office, while the other flashes to repeat the code going out, to control the operation of the switches and signals. These indications inform the operator of the action taking place in the system. The annunciator bell in connection with the board is provided to call the operator's attention to the arrival of a train at certain points, and he can acknowledge the condition by pushing one of the large buttons at the right or left of the machine, which will cut out the bell, but make no change in the operation of the indication lights.

Selector System Used for Control

For the control of the two switches, the four derails and eight signals, only two wires extend from Concord through Gibbs to Arenzville. The indications of the position of the trains on the track circuits and also the positions of the switches and signals are also sent in to the office over these same two wires.

The a-c floating system is used as the power supply. A 220-volt alternating current supply circuit extends from Arenzville southward to the last track feed south of Gibbs. At each switch a set of 16 cells of lead-type storage cells of 75 a.h. capacity is provided to furnish 32-volts direct current for the operation of the switch machines to operate the switch and the two derails. Connections from this battery are taken to provide 10-volts direct current for the relays, the line control circuit, the code transmitters, etc. An Edison storage cell of 80 a.h. capacity is provided for each track circuit. All storage batteries are charged by Union electronic rectifiers.

The centralized control system of the Union Switch & Signal Company is of the selector type. The levers in the operator's machine are in no way mechanically interlocked but the signals are track circuit controlled



The Control Machine With Illuminated Track Diagram and Miniature Levers Is Located on the Operator's Table at Concord

lever, marked *B*, is then turned from *R* to *N*, which results in switch 4 at Gibbs moving to position for a southbound movement from the single track to the southbound main. The derail 5 is moved to the clear position and derail 6 moved to the derailing position. After all these functions have operated and have been locked, an indication is sent in, which lights the indication lamp above the *R* position of lever *B*.

The operator is now ready to clear signal 7 to give the train authority to proceed from Arenzville to Gibbs. He moves the lower left lever marked *C* to the right to position *S*, which causes signal 7 to move to the clear position, which is indicated on the operator's machine by the light above the *S* position being illuminated. Signals 8, 9 and 10 remain at the top position. As soon as the locomotive passes signal 7, entering the track circuit including the switch 1, an indication is sent in to the machine, which lights a lamp at this switch, as shown on the track diagram. The operator then knows that the train has accepted signal 7. The signal is track circuit controlled and automatically goes to the stop position as soon as the locomotive passes. However, the operator moves the signal lever

and electric route, detector and approach locking is in effect for the control of the switches and derails so that no switch or derail can be thrown under a train.

The selectors are the improved Gill type which has been employed extensively for years in telephone train dispatching systems. The code sending mechanism has been developed particularly for the centralized control system. One code sending machine is located in the office at Concord to send out the codes to pick up selectors at the switch and signal locations and one code sending machine is located at each switch location to send in the codes to the central office to cause indications to be given on the machine as to the location of trains or the position of the switches, derails and signals.

On the track chart and above the levers of the ma-

chine in the operator's office are 18 indication lamps. For the operation of each indication, one selector is required to receive the code sent in from the field when the particular operation is completed. Likewise, at each switch location one selector is required for the control of each operation of each function, such as a switch, derail or signal. In order that a minimum number of instruments shall be connected to the control line circuit, only one relay is connected to the line at Concord, one at Gibbs and one at Arenzville. The selectors at each location are connected through the contacts of these line relays. The line relays and also all of the selectors operate when any code is sent on the line. However, on account of the features of a selector, only one selector operates to close its contact when a particular code is received.

Icing Three Cars Per Minute

Indiana Harbor Belt ice dock at Blue Island, Ill., establishes speed records

IN the months of August, September and October of this year, 81,412 cars of perishable freight were handled through the icing station and hump yard of the Indiana Harbor Belt at Blue Island, Ill. During August, this movement aggregated 18,747 such cars, an average of 604 per day; during September, 28,478 cars were handled, an average of 949 per day, and October, 34,187 cars, a daily average of 1,102 cars. The largest day's business for this period, which is also the record for the year, was on October 5, when 1,576 cars of perishable freight were handled. This large business was handled by a crew of 60 men on the ice dock, divided between two eight-hour shifts, beginning at 7 a. m. daily.

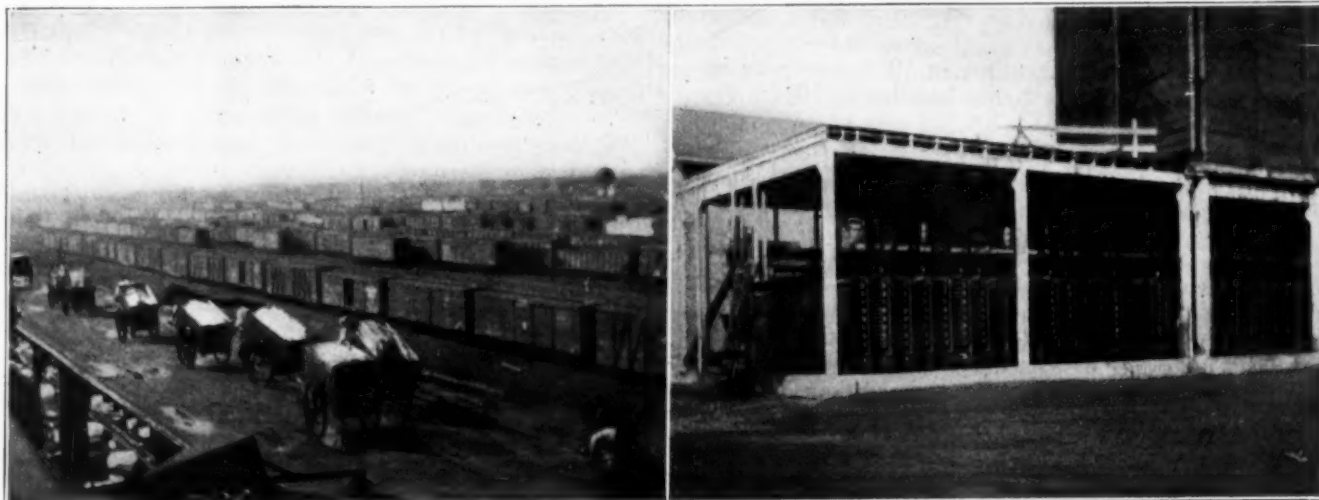
Outstanding Records

Among the outstanding records is that established on October 7, 1927, when, in 16 hours, 1,470 cars were iced, or an average of a car every 39 seconds for the entire period, including all delays and also the time of "setting" and "pulling" the icing station tracks. The average actual icing time per car was, of course, con-

siderably less than this. Other high days were on September 14, 1928, when 1,027 cars were iced in the 16-hour period and September 15, when 1,103 cars were iced in the same time. On the later day, 712 cars were iced between 3 p. m. and 8:25 p. m. by the second shift, which is at the rate of a car every 27.4 seconds. At the time of the visit of the *Railway Age* representative to this icing station, 37 cars were iced in 11 minutes, an average of 17.8 seconds per car, or 3.3 cars a minute.

These records are made possible by the complete mechanical facilities provided and by the careful planning which has resulted in the efficient use of these facilities. The entire system is designed to avoid breakdowns at crucial moments and to save unnecessary running about by the supervisory forces and the men under them. It will be appreciated that, with the intensive business handled, the highest efficiency can be obtained only by the maximum utilization of the efforts of each man.

The records are particularly interesting when it is considered that all varieties of perishable freight are



Left: The Crushed Ice Deck; Right: The Condensers and Condenser Tower

iced at the Blue Island dock. The majority of the movement consists of fresh fruits and vegetables, iced with block ice, but there is a considerable movement of fresh meat and other packing-house products requiring crushed ice and salt.

The movement of perishables also includes a number of cars traveling under standard ventilation, and with protective heater service when the weather requires. The adjusting of vents and the installation and removal of heaters are also performed by the icing force.

Other Traffic Must Move

Account must be taken, too, of the fact, that while the perishable movement is heavy through the Blue Island yard, there is also a large movement of other commodities. For example, during August, cars of perishable freight constituted only 18 per cent of the 100,364 cars handled through this yard, while of the 102,976 cars handled in September, but 27 per cent were loaded with perishables, and of the 112,974 cars handled in October, only 30 per cent were perishables. This hump yard, equipped with car retarders, was described in the *Railway Age* of February 26, 1927, page 569. That the efficient operation described at that time has been continued is indicated by the fact that, on September 21, 1928, the hump crew working between 3 p. m. and 11 p. m. classified 1,384 cars, an average of 173 cars per hour, or approximately one car every 20 seconds.

Traffic Information

The connecting lines which deliver perishable freight to the Indiana Harbor Belt, and the junction points at which such freight is delivered, are as follows:

M. St. P. & S. S. M.	Norpaul
C. M. St. P. & P.	Norpaul
C. & N. W.	Proviso
C. G. W.	Billwood
I. C.	Broadview
C. B. & Q.	LaGrange
A. T. & S. F.	McCook
C. & A.	Argo
Wabash	Chicago Ridge
C. R. I. & P.	Blue Island

The large majority of this freight is from the West, California in particular, and it is destined chiefly to eastern markets. There is, however, a relatively small movement of apples and berries from Michigan and bananas from New Orleans, destined to the West, which also moves through Blue Island.

The growth of the perishable movement handled at this dock is indicated by the following figures:

1914	75,320 cars
1917	91,092 "
1922	172,472 "
1927	232,502 "
1928 (10 months)	208,258 "

The perishable traffic handled in 1927 shows an increase of 208 per cent over that handled in 1914. For the first ten months of 1927, 201,038 cars of perishables were handled, as compared with 208,258 cars in the similar period in 1928, an increase of 7,220 cars, or 3.5 per cent.

The Ice Plant

The present icing facilities were built in 1919, at which time the dock had a capacity of 40 cars. This was enlarged to 80 cars capacity in 1926, when the yard was equipped with car retarders. The present plant supersedes a natural ice storage house, which was built in 1910, and had a storage capacity of 40,000 tons, and the ice-dock accommodated 36 cars.

The ice manufacturing plant at Blue Island, situated immediately adjacent to the ice dock, is owned and operated by the Federal Ice Refrigerating Company. It consists of a compressor room, 125 ft. by 75

ft., equipped with five 250-ton Ball compressors, a tank room, 220 ft. by 125 ft., a daily storage room, 220 ft. by 125 ft., a large storage room with a storage capacity of 15,000 tons, a cooling tower for condensers, having 80 stands of pipe, and two electric crushers, each 30 in. in diameter.

Conveyor System

The plant is equipped throughout with an automatic conveyor system, comprising 2,450 ft. of chain conveyors, consisting of 1,680 ft. on the ice dock, 150 ft. in the daily storage room, 300 ft. leading to the car loading platform, and two complete units of 200 ft. each of inclined conveyors to the crushers. The operation of this conveyor system throughout the plant is governed by a signal system of electrically-operated bells. At the times when the car icing is at its height, rapid conveying methods are essential to keep the dock supplied with ice, and any break-downs in the system would result in an extremely serious delay. The signaling system serves a particularly important part in avoiding delays. If a link of the chain breaks at any point throughout the plant or on the dock, the particular unit of the conveying system affected may be stopped at once and the repairs made in a few minutes. Without the signaling system, the conveyors might continue to operate, causing serious breakages, which would require hours to repair and demoralize the entire system of handling and car-icing. It is for the same reason that two complete conveyor units are provided to the ice crushers. Only one of these is used at a time, the other being held in reserve for emergencies. These two units are so arranged that the ice-conveying may be shifted from one to the other at a moment's notice.

During the perishable season, the normal usage of ice runs from 500 to 700 tons per day. For the year 1927, there were 97,878 tons used. The usage on the record days was as follows: October 2, 1925, 1,009 tons; September 18, 1926, 1,030 tons; October 5, 1928, 978 tons.

The Ice Dock

The ice dock is of the island type, 1,680 ft. long. It has a spotting capacity of 80 cars, 40 on each side. It is double-decked; the first deck is slightly higher than the car roofs and is used for ordinary block icing. The second deck is some 10 ft. higher and is used for the icing of meat cars and others requiring crushed ice.

To increase the speed of setting and pulling, the dock is equipped with train signals at each end, for both tracks. These signals are governed by 16 push-button stations, situated every 100 ft. along the dock. This signal system is another of the devices for saving steps and incidentally for saving time.

All cars requiring crushed ice are iced from the upper deck. An ice-buggy storage room is provided immediately under the crusher and on the same level with the upper deck. The ice-buggies used are of the two-wheel type and 250 of them are provided, which number is sufficient to take care of all normal and emergency requirements. The crushed ice is dropped by gravity from the crushers into the buggies, which are then wheeled to the proper position on the dock. Twelve chutes are provided for conveying the ice from the buggies into the bunkers of the cars. These chutes move on rail conveyors along both sides of the upper deck. Salt columns are provided at every car length, so that the salters are never required to walk more than a few feet.

The entire layout is completely equipped with a flood-

lighting system for night operation, which provides adequate illumination for all parts of the icing station.

Methods of Operation

Many of the trains arriving at Blue Island yard consist entirely of cars of perishables. When a train contains perishables and other freight, it is made up at the yards north of Blue Island so that all perishable cars are together at the head end. The solid trains of perishables are run almost directly to the ice dock, with a minimum of switching, while the other trains containing perishables are run into the receiving yard, where the perishables are cut off of the head end and run to the ice dock.

This prompt handling of the cars themselves necessitates equally prompt handling of the billing, icing instructions, etc. In order to accomplish this, advance consists are received by the icing station from the dispatcher. The conductor delivers icing statements to the local agent's office and a copy to the ice-house. This statement is made out at the western connections, containing information as to the commodities and what protective service is required. Changes in icing instructions are transmitted from the agent's office to the icing foreman's office on the upper deck of the dock by means of a teletype installation. Under this arrangement, the information in regard to the train is available before the cars are placed at the dock, so that the necessary preparations may be made.

Ten inspectors make their headquarters at Blue Island. Of this number, two represent the Atchison, Topeka & Santa Fe, three the Pacific Fruit Express Company, two the California Fruit Exchange and one inspector for each of three meat packing companies. In addition, the Indiana Harbor Belt employs four supervisors of refrigeration who devote their entire time to the icing and handling of perishable shipments through this station.

The Indiana Harbor Belt representatives in charge of the icing, determine the amount of ice and salt necessary for each car when specific instructions are not shown on the icing statement. The entire plan of saving steps by mechanical contrivances and efficient methods was worked out by the Indiana Harbor Belt, in conjunction with the ice company.

After the cars have been spotted, they are gone over by the icing crew in the following manner. First the hatch openers go over the cut of cars to be iced. They are followed by the checker, who keeps the field record. The drain openers and tampers follow to prepare the bunkers for icing. They are followed by the icemen who fill the bunkers and break the block ice. If salt is to be applied, they are followed by the salter and the salt tamper. The hatch-closer then finishes the job.

The movements of all these men have been planned so as to secure the maximum efficiency with the fewest steps possible. The conveying system insures a proper supply of block and crushed ice on the decks at all times and the mechanical facilities are arranged in the handiest fashion.

The men have been educated to the point where they no longer leave their tools lying around carelessly. This is an important point, from standpoints of both safety and efficient operation. The wide variety of implements used, such as tampers, icebars and shovels, and the necessity for immediate action, make it essential that all tools be in their proper place when they are not actually in use.

When not actually icing cars the crew is kept busy supplying the lower deck with block ice and the upper deck with crushed ice in buggies, distributed through-

out the length of the dock. The organization is such, however, that when a cut of cars is set at the dock, each member of the icing crew knows exactly what his duties are and where to station himself. His implements are immediately available and the work proceeds without delay.

Railways Except to Report on Private Cars

WASHINGTON, D. C.

THE Association of Railway Executives, on behalf of its membership, which comprises substantially all of the Class I railroads, has filed with the Interstate Commerce Commission a statement of exceptions to the report proposed by Commissioner McManamy in the matter of the use of "private" passenger cars.

It does not understand that the report is intended as a finding of any fact or to be the basis of any order. If, however, this understanding is incorrect, the association excepts to the proposed report on the ground that no hearing has been held and no opportunity has been granted for cross-examination or rebuttal as to any matters therein referred to and accordingly no valid order can be made in this proceeding.

It excepts to the report in that it finds that the use of private or business cars, when occupied by a person entitled to use and using free transportation, is unlawful, saying:

"It is respectfully submitted that the misconceptions shown in the report in this regard is based fundamentally on the declaration that 'a passenger train car is property' even when used as a means and facility of transporting a passenger entitled to use and using free transportation; whereas a passenger train car, under the conditions mentioned, is not property within the meaning of the Interstate Commerce Act, and the finding that it is is respectfully excepted to. The provisions of the Interstate Commerce Act, as amended, prohibiting the free transportation of property, apply to 'properties' which are articles of commerce or freight, and not to facilities or instrumentalities of commerce used as a part of the free transportation authorized by the Act."

It excepts and objects to those parts of the report containing reference to and criticism of the purposes for which the private or business cars are used when occupied by a person entitled to use and using free transportation. It insists that the things that may be lawfully done under the provisions of sections 1 and 22 of the act are unrestricted as to purpose and use. "The controlling principle is whether or not an official or employee is lawfully entitled to use free transportation. If he is, it is lawful to use a private or business car for such transportation without charge, and the purpose of the use is irrelevant and immaterial and the commission is without jurisdiction to limit such use to business purposes."

All discriminations, preferences and prejudices are not unlawful, the association says. To be unlawful such discriminations, preferences and prejudices must be unjust and undue. It has been repeatedly held by the Supreme Court that to constitute unjust discrimination, or undue preference or prejudice, the treatment accorded one person or class of persons must be different under substantially similar circumstances and conditions. It is manifestly impossible to reach a conclu-

sion on this question until all the attendant circumstances and conditions have been ascertained, which has not been done in this proceeding.

Furthermore, an essential and material difference is noted between the charge for the movement of special, privately-owned, or chartered cars, and the free movement of business cars of carriers occupied by persons lawfully entitled to use and using free transportation. It is assumed that the charges referred to in the report, for the movement of special, privately-owned or chartered cars, are made when none of the occupants are entitled to free transportation.

"The transportation of both classes of cars is incidental to the transportation of the persons. Both classes of cars are moved as facilities or instrumentalities of commerce. The difference, therefore, lies in one class of persons being required to pay fare and the other class being expressly relieved, pursuant to an Act of Congress, from paying such fare. The difference is legalized by statute."

Exception is taken to the statement that "the fact that the practice of transporting or moving the private cars of other carriers free may have existed for some time can not be urged as legalizing it," on the ground that this statement does not present all of the facts and circumstances which justify the conclusion that the long continued practice of transporting business cars of other carriers free is evidential of the legality of the practice. Facts relating to this aspect of the subject are summarized as follows.

(a) This practice was in existence at the time of the enactment of the pertinent parts of sections 1 and 22 of the Interstate Commerce Act and the Congress presumably was cognizant of such a practice and did not forbid it;

(b) The Commission has been for more than forty years charged with the duty of keeping itself informed and advised in such matters;

(c) It has repeatedly made and issued orders respecting the matter of regulations to govern the issuance and recordation of passes, to wit, on June 8, 1911, March 11, 1912, May 6, 1912, and June 28, 1915;

(d) The present regulations to govern the forms and recording of passes, issue of 1917, were approved and adopted by the Commission by its order of July 8, 1926;

(e) The present regulations cover all passes, both those for movements over the home line and those for movements over foreign lines upon passes issued in favor of officers or employees;

(f) The present regulations expressly provide for the issue of a pass in the following form: "Pass John Smith, car, and five officers and employees. Account President, officers and employees X. Y. & Z. Ry." In this regulation the "X. Y. & Z. Ry." is not the home line, but a foreign line

(g) The present regulations do not require that a pass for an officer or employee of the carrier issuing the pass show the name of the carrier by which employed, but do expressly provide that "A pass for an officer or employee of a carrier other than the carrier issuing a pass must show the title or occupation of the person to whom the pass is issued and the name of the carrier by which employed."

(h) The present regulations expressly provide further that "Every pass issued upon which meals or sleeping, parlor or other accommodations are to be furnished free must indicate the character of the accommodations to be furnished thereon." That is said to be broad enough to include a car.

The existing regulations of the Commission, which have been in effect for many years, according to the statement, thus expressly recognize the legality of handling without charge the private or business car of another line when occupied by a person lawfully using free transportation and handled as a part of lawful free transportation.

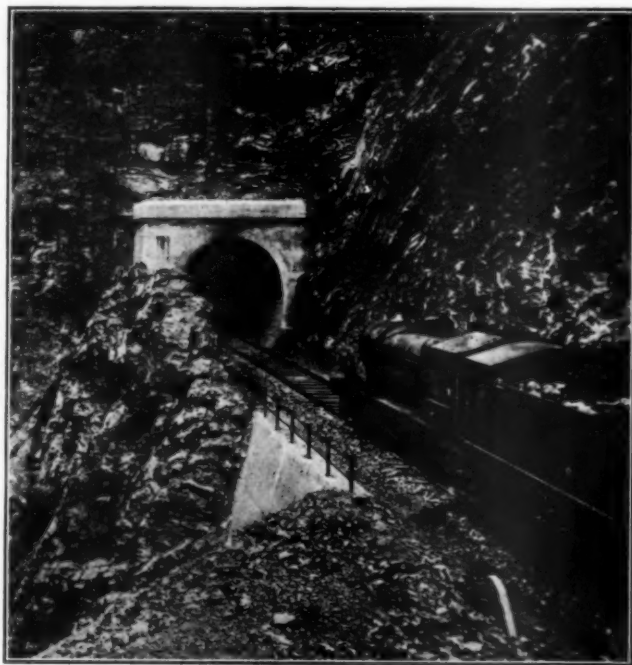
"It is respectfully submitted that there is nothing unlawful in a railroad officer's inviting a guest to take a meal with him, although both are traveling at the time, and it is not subject to proper objection that a railroad officer, having legitimate business for his company with a passenger paying fare, should facilitate their business negotiations by having the passenger occupy a berth on the officer's business car—in other words, transacting his business while the car is moving instead of transacting it while the car is standing still at a station. Under these circumstances there is no such similarity in the circumstances and conditions attending the transaction as exists in respect to passenger paying fare and traveling in the coaches. The fact that under these conditions there would not be any undue or unjust discrimination, demonstrates the necessity for a hearing, in which all the facts and circumstances of the case are made known, before there can be any finding in respect to unjust discrimination or undue or preferential treatment.

"Wherefore, the association submits that these exceptions be sustained and that they be set down for argument before the full commission at an appropriate time."

The statement was filed by Alfred P. Thom, general counsel, and Alfred P. Thom, Jr., general solicitor, of the association.

EIGHTY SEVEN THOUSAND FIVE HUNDRED DOLLARS is the amount which was awarded by a jury in the United States Court in Brooklyn, N. Y., on December 18, to Miss Shields, of New York, for personal injuries and damages sustained when, in her automobile, she was struck by a train of the Baltimore & Ohio at Linden, N. J.

* * *



On the North Western Railway of India



A Burlington Tour Party at St. Mary, Mont.

Personally Conducted Tours Growing in Popularity

*This type of service has developed rapidly in recent years
—A wide variety of routes offered*

PERSONALLY conducted all-expense tours have developed so rapidly that at the present time six railroads operating out of Chicago offer 370 different tours over 41 routes at prices ranging from \$86 to \$300. At the same time, the number of passengers handled from this one terminal has increased from about 300 to over 12,000 annually. Under these escorted tours the railroads plan the entire trip, take care of all details, provide for the comfort of the patron and arrange entertainment enroute, besides supplying a guide whose duty is to look after the interests of the people in his party. The cost of each tour, including transportation, meals, lodging, etc., is known in advance so all the patron has to do is select the tour desired and pay the amount required.

Tours Started 28 Years Ago

To trace the development of this class of business, the activities of the Chicago & North Western-Union Pacific tour department may be considered. The first personally conducted tours were operated by these companies in 1900 to persuade colonists to settle in California. These left Chicago on Tuesdays, Wednesdays and Thursdays during March and April of that year and carried about 300 people. The success of this enterprise resulted in its continuation during the following years until four tours to Yellowstone National Park and the Pacific Coast were added in 1905. In 1909 the number was increased to eight summer tours to California, Yellowstone, Colorado and Utah and five winter tours to California. Since that time the increase has been gradual.

In the early days, the tours were handled without additional equipment and 50 people were considered a large party. In contrast, present day tours are usually operated in special cars or trains, the number of people

participating often reaching 200. A total of 954 people were handled by the Chicago & North Western-Union Pacific tour department in 1917 while in 1928 the number had increased to 5,600.

The broadening of the source of the traffic during the past years is also of interest. In 1900 most of the people on these tours came from Chicago, while at present only about 50 per cent are Chicagoans with an equal percentage from the east, including foreign countries. Among the latter, Germany and England furnish the larger number of patrons.

The increased patronage of personally conducted tours is due to several reasons which may be divided into two classes, those controlled by the railways and those prompted by the passengers. The part played by the railways consists in educating the public to travel through advertising and solicitation and designing the tours to meet the approval of the traveler. The people like the trip in general, the low cost, the personal conveniences, the democracy promoted among the participants and the fact that the patron does not have to worry about tickets and reservations, train schedules, baggage, hotel reservations, meals, and the points of interest to be visited and consequently recommend the tours to friends. Neither influence can be considered the more important as both are linked together. However, it is known that the recommendations of the tours made by satisfied customers among their friends has been a more important factor in the development of tour business than advertising.

Tours are Economical and Efficient

The tours have been developed to a point where the total charge may be regarded as the lowest possible consistent with first class service throughout and with a vacation plan embracing the most attractive features



Members of Rock Island Tour Party Horseback Riding Near Grand Lake, Colo.

which it is possible to include in the time allowed. They are arranged to appeal to busy business men and women who do not have the time to prepare vacation plans with the same care, judgment and perception which characterize the conduct of their business affairs; to others who may not fully appreciate the value of a thoroughly planned trip; to those to whom a vacation comes at an unexpected time and leaves little opportunity to make adequate arrangements; and to those who, because of a certain degree of timidity about asking questions or traveling alone, spend their vacation close to home. These trips have an advantage over those planned by an individual since they are arranged by railroad organizations that are thoroughly familiar with the regions to be visited; they embrace the features one naturally desires to see; they omit the commonplace and the duplications; and utilize every hour.

That the tours and acquaintances developed enroute are enjoyed by the patrons is indicated in the many letters received by the tour departments of the railroads and the reunions which the members of a tour often hold during the winter months. The testimonials usually comment upon the delightfulness of the journey, and the points visited and express appreciation of the courtesy and helpfulness of the escort. The tours are also popular among parents who wish their children to travel under experienced guardianship. The patrons of tours not only include those of moderate means but also people who have traveled extensively.

Some Roads Specialize in School Tours

Most of the tours from Chicago are open to the general public although some roads, including the Pennsylvania, and the Baltimore & Ohio, specialize in tours for school children. The Pennsylvania during the past five years has specialized in high school children tours to points of historic interest in

the east. Tours are arranged each year for the 24 high schools in Chicago so that the pupils can take advantage of the spring vacation. In some cases the tours are the same for several schools while in other cases they are not. The success of these tours is indicated in the fact that during the last spring vacation over 500 pupils, from Chicago high schools participated. In addition, 300 pupils joined tours operated for some Chicago high schools at times other than during the spring vacation.

In arranging these trips the Pennsylvania concentrated on the senior class in each school. The pupils were arranged in groups of 20, with an instructor from the school as chaperon while a representative of the railroad escorted each tour party. The rules of the tours were stringent, requiring early retirement and participation in the entire program without deviations. The places visited included Gettysburg battlefield, Baltimore, Md., Norfolk, Va., Yorktown, Jamestown, Williamsburg, Washington and Annapolis, Md. The cost was \$138 for one person in a lower berth.

In addition, the Pennsylvania operated an 11-day tour to the historic east in June for school teachers, educators and business people. An experienced tour manager was in charge of the party, which visited New York, Boston, Mass., Philadelphia, Pa., Baltimore, Md., Annapolis, Washington, D. C., and Gettysburg battlefield. Another tour, from April 28 to May 5, was operated for the general public to Richmond, Va., Jamestown, Yorktown, Cape Henry, Baltimore, Md., Annapolis, Washington and Gettysburg.

The Chicago tour bureau of the Baltimore & Ohio, which also engages in high school tours, is distinguished by its women's department. The manager is Mrs. W. G. Brown, wife of the general passenger agent, who, with two assistants, serves the feminine patronage. The women's department was established in 1924, following the successful operation of the Chicago Club Women's tour sponsored by Mrs. Brown. This tour to Washington has been conducted each spring and is popularized among the women's clubs of Chicago by illustrated lectures given by the women's department of the Baltimore & Ohio. The department also solicits non-tour traffic and endeavors to educate women in the value of traveling to points of interest during vacations. During spare time the department assists the National Federation of Business and Professional Women's Clubs, Mrs. Brown being chairman of its national transportation committee, the purpose of which is to give travel aid to the 51,000 members throughout the United States.



Milwaukee Tour Party at Opening of Gallatin Gateway to Yellowstone Park

During the past year, the department has given over 100 illustrated travel lectures to clubs. During July over 1,000 members of the Federation participated in tours arranged in conjunction with the annual convention at New Orleans, La. A special train was operated from New York to New Orleans over the Baltimore & Ohio to Washington, the Southern to Atlanta, Ga., the Atlantic & West Point to Montgomery, Ala., and the Louisville & Nashville to New Orleans, La., and another special from Chicago over the Illinois Central to Gulfport, Miss., and the Louisville & Nashville to New Orleans.

A section of this train was run from Cincinnati, Ohio, over the Baltimore & Ohio to Memphis, Tenn., and another from Kansas City, Mo., over the St. Louis-San Francisco to Memphis.

During April, May, June, July, August and September, the Baltimore & Ohio operated 15 personally conducted all-expense tours of 15 days from Chicago to Washington and New York, including Philadelphia and Atlantic City. The total cost was \$129 for one passenger in a lower berth. In addition, a tour for high school



Going to Sun Mountain Glacier Park, On a Burlington Tour children was conducted on April 27 and another on April 28 to points in the east, including Washington, Richmond, Va., Gettysburg, Pa., Philadelphia and Annapolis, Md. From October 31 to February 27, a total of 35 all-expense tours were also operated to Jacksonville, Fla., via Washington and Baltimore.

Burlington Has Variety of Tours

The tour department of the Chicago, Burlington & Quincy, which was started in 1925, offers a variety of tours to the west. The Rocky Mountain touring plan of the Chicago, Burlington & Quincy, the Great Northern and the Northern Pacific, which embraces Glacier, Yellowstone, Rocky Mountain and Rainier National Parks, Colorado, California, the Black Hills and Alaska comprises 15 routes which require from 7 to 26 days. Last summer 131 escorted tours were operated from Chicago and St. Louis, Mo., including 31 in June, 54 in July, 43 in August and 3 in September. The cost varied from \$160 to \$403, depending on the tour and accommodations selected.

Four Alaskan escorted tours over two routes were offered last summer. The 26-day trip to Seward via the Pacific Northwest and Rainier National Park, included sightseeing trips in Portland, Ore., over the Columbia River Highway, in Tacoma, in Rainer National Park and in Seattle; a 16-day sea trip through the "inside passage" to Seward with stopovers enroute at Ketchikan, Wrangell, Juneau, Cordova, Valdez and Latouche; and trips to the interior from Cordova and



A Milwaukee Tour Party Passing the Ice of Glacier Bay, Alaska

Seward. The 18-day trip to Skagway followed the same course, omitting the points north of Juneau and including Skagway.

During the 1928 summer season, it operated seven personally conducted all-expense 20-day tours from Chicago to California and return over the Atchison, Topeka & Santa Fe, the Western Pacific, the Denver & Rio Grande Western and the Chicago, Burlington & Quincy. These tours included the Indian-detour, the Grand Canyon, Ariz., San Diego, Cal., Los Angeles, Yosemite National Park, San Francisco, Feather River Canyon, Salt Lake City, Utah, the Royal Gorge, Colo., Colorado Springs, and Denver. These all-expense escorted tours, one of which was operated in June, four in July and two in August, met with considerable success and are being continued during the winter months. The cost of the tour including rail ticket, Pullman accommodations, hotels, all meals and auto trips was \$362 for one person in a lower berth.

North Western-Union Pacific Tours

The Chicago & North Western and the Union Pacific, which have been arranging escorted tours for 28 years, operated 96 tours last summer, from Chicago to Yellowstone and Rocky Mountain, Zion, Grand Canyon and Yosemite National Parks, Utah, Colorado, California, Alaska and the Canadian Rockies over 8 routes. Of these, 21 left in June, 34 in July, 30 in August and 11 in September. The time required varied from 11 to 23 days.

The Pacific Northwest-Alaska-Canadian Rockies tour required 23 days. After leaving Chicago it included Omaha, Neb., Portland, Ore., Seattle, Wash., Victoria, B. C., Vancouver, three days sailing to Skagway, Alaska, Carcross, B. C., two days sailing from Skagway to Prince Rupert, B. C., and return via Jasper Park,



An Early North Western Tour at Sheep Lake, Colo., in 1920

Winnipeg, Man., and Duluth, Minn. The cost of the trip for one person in a lower berth was \$399.

During the winter two all-expense, 22-day escorted tours were operated to California. The cost of these was \$459 for one person in a lower berth. These tours made direct connections at San Francisco with two all-expense tours to the Hawaiian Islands.

Milwaukee Operates Guild House Party Tours

The Guild House Party Tours of the Chicago, Milwaukee, St. Paul & Pacific from Chicago to the West last summer included 52 personally conducted all-expense tours over four routes with two optional variations of one of the routes. The time ranged from 7 days to 3 weeks and the cost from \$72 to \$261. Of the 52 tours, 6 started in June, 26 in July and 20 in August. Persons desiring to visit Alaska were able to leave the Pacific Northwest tours at Victoria, B. C., for a ten-day cruise. Other tours included Yellowstone, Salt Lake and Colorado. The Pacific Northwest, California, Salt Lake and Colorado tours included the Twin Cities, Seattle, Wash., Rainier National Park, San Francisco, Cal., Los Angeles, Salt Lake City, Utah, Colorado Springs, Colo., Denver and Des Moines, Iowa.

Rock Island Operates Two Types of Tours

The Chicago, Rock Island & Pacific operated 10 personally conducted all-expense tours to Colorado during June, July, August and September from Chicago, St. Louis, Mo., St. Joseph, Kansas City, Memphis, Tenn., St. Paul, Minn., Minneapolis, Dallas, Tex., Ft. Worth, Des Moines, Iowa and Omaha, Neb. The tours required two weeks and the cost, including the railroad fare, from Chicago was \$175 for one person in a lower berth. Of the two weeks, 10 days were devoted to sightseeing trips to points of interest around Colorado Springs, including Rocky Mountain National Park, Grand Lake, Idaho Springs and Denver. Each party was accompanied by a tour escort, who supervised all the intricacies of transportation, hotel arrangements and entertainment; and looked after the comfort of each member.

In addition to the personally conducted all-expense tours, the Rock Island offered 5 independent go-as-you-please all-expense-plan Colorado tours. These enabled the patron to leave on any day and provided him with a book containing coupons for all features, indicated in the itinerary of the tour selected. The patron was also able to stay longer than the schedule provided at any particular place, if he desired.

I. C. C. Defends Valuation Methods

WASHINGTON, D. C.

TAKING the position that the railroads are getting along very well under a national rate structure "substantially consistent with the method of determining value adopted in the O'Fallon case," the Interstate Commerce Commission has filed in the Supreme Court of the United States its brief in the recapture valuation case, signed by Walter L. Fisher, as special counsel, and Oliver E. Sweet and Roland J. Lehman as attorneys, in defense of its methods of valuation which are assailed by the railroads.

"The method adopted by the commission in the O'Fal-

lon case gives all the consideration to current reproduction cost which the commission regards as 'due' or practicable if the Transportation Act is to be made administratively effective," the brief says in conclusion. "The method is intelligible. It is workable. It is 'fair.' It furnishes a 'rule of reason' applicable to railroad regulation. It does not confiscate property or property rights. The annual return which the O'Fallon will receive for three recapture periods on the 'value' of its property as fixed by the commission will be in excess of 12 per cent on that value, and would be much more than 6 per cent on 'reproduction cost' under any theory supported by the record.

"The commission has dealt with realities. The existing national rate structure is substantially consistent with the method of determining 'value' adopted in the O'Fallon case. Railroad credit has never been better than it is to-day. Railroad stocks and bonds have never been more highly regarded for investment. If, as believed, we are facing a period of deflation and of general price decline the adoption of the theory of reproduction cost would shake railroad credit and make difficult the issuance of new securities, whether stocks or bonds. To substitute for the principles and administrative methods which have produced the present favorable conditions, principles and administrative methods under which rates will be confiscatory if they are not greatly increased and under which railroad stocks will become the most speculative securities on the exchanges, would be in the judgment of the commission, to destroy any effective regulation of railroad rates and to discredit and perhaps destroy the whole system of private ownership and operation."

If the contentions of appellant railroads are sound, the brief says, the \$18,900,000,000 "estimate" of the valuation of the railroads made by the commission in 1920 "must be increased approximately 60 per cent or over \$11,000,000,000, in order to ascertain the recapture base which is also the rate base upon which rates must produce a 'fair return' in order to avoid 'confiscation.' Inasmuch as rates must in any event be increased if necessary to cover the cost of operation, which is generally regarded as normal at approximately 70 per cent of the gross receipts, the net increase of rate levels that might be required to avoid confiscation under the current reproduction cost theory as compared with the O'Fallon method, would be about 30 per cent of the 60 per cent above indicated, or 18 per cent over rates which would not be confiscatory under the O'Fallon theory. This 18 per cent, however, cannot be brought about by any horizontal increase in the rate level. Many classes of freight will not stand an increase of rates. It is at least probable that any increase in passenger rates would diminish the net earnings."

As in the court below, the commission's counsel take the position that value for rate-making purposes is not an economic concept, but a "rule of reason" to be applied by an expert commission to "one of the most difficult of all the problems of government—the legislative regulation of a private agency engaged in the performance of a 'function of government'." The fair value rule of *Smyth v. Ames*, it says, "was never intended to be anything but a *rule of evidence*, indicating in the broadest possible terms the various 'elements' that were properly to be given consideration by the expert commission to whose 'reasonable judgment' was to be left the final determination of the weight to be attached to each of the many elements entitled to consideration. It is only by this interpretation of the 'fair value' rule that any hope of a rational determination of the rate base

can exist. Even this hope must fade if the judiciary does not leave to the expert commission the greatest freedom of judgment in the performance of its legislative function."

The assertion is made that the distinction between national railroads and local public utilities is real, although "it may never yet have been given specific consideration by this Court." "The regulation of local public utility rates" is said to be "so different in scale and character from the regulation of national railroad rates that methods that might be susceptible of some practical application to the former are wholly inapplicable to the latter. This is especially apparent in its bearing upon the practical administration of the recapture provisions of the Transportation Act with its annual computation of excess earnings for all railroads of the United States engaged in interstate commerce . . . If it be possible to conceive of the reproduction of a municipal water system during a period of 'one, two or three years,' and to make some sort of forecast of the prices likely to prevail during such a period as suggested in the *Indianapolis Water Company* case, surely it is utterly fantastic to speculate upon the cost of reproducing the interstate railroads of the United States as a whole, and decades would be required in the process."

Other excerpts from the brief are as follows:

Just as the exercise of the "police power" is adjusted to the changing conceptions of the public welfare, so railroad rate regulation must be adjusted to this clearer conception of what is "just" and "fair" and "wise," in the treatment of the "capital invested" and the "property dedicated" to the performance of "a function of the State." Whatever may have been the theory of "fair value," in the past, the Transportation Act has, in and of itself, created new conditions and declared new policies which the court should be prompt to recognize in the interest of the railroads as well as in the interest of the public. If it be a legislative change of public policy it calls for a corresponding readjustment of judicial policy unless there is something unconstitutional in the legislative act. Surely an act of Congress which permits a group return of 6% and which will in fact produce as in the case of the O'Fallon railroad a return of 6% and more on a rate base or valuation in excess of "prudent investment" with provision for the recapture of only one-half of the excess earnings and for the use of the recapture fund for the benefit of the group of which the contributing railroad forms a part, can not be held unconstitutional.

It is not contended here that the amount actually or prudently invested in property dedicated to the public service constitutes the sole or controlling measure of value of such property for rate-making or other purposes of regulation; but as indicative of a growing tendency to give greater weight to "invested capital" than to "current reproduction cost" as the basis for rate regulation, may be cited the Federal Water Power Act, passed by Congress in 1920 (41 Stat. L. 1063), shortly after the passage of the Transportation Act, and the English Electricity Supply Act of 1926 (Chitty's Annual Statutes for 1926, p. 159), and the same principle was applied to taxation in the War Excess Profits Act (40 Stat. L. 300, 302 et seq.), passed by Congress in 1917.

Fortunately, also, the opinion in *Smyth v. Ames*, contained the wise reservation: "We do not say that there may not be other matters to be regarded in estimating the value of the property" and in the evolution of legal and economic thought on this vexed subject a test has been suggested by which it can be determined, not whether the method followed by the Commission has been exactly that which would have been followed by the court, but whether a particular "value for rate-making purposes" is sound in law and in economics and in public policy.

The chief objection made by the petitioners to the valuation in the *O'Fallon* case is that it does not give "due consideration" to reproduction cost, as shown by or reflected in the current prices of labor and materials for and during each of the recapture periods respectively. The contention is that such reproduction cost, which is sometimes called "spot" reproduction cost, is the controlling or predominating or determining factor in ascertaining "value for rate-making purposes." On any sort of analysis this amounts to the claim that in the absence of

some extraordinary exceptional consideration peculiar to the particular case, such "reproduction cost" is the *only* factor and that it is conclusive at least in determining the *minimum* amount that can be used as the rate base.

No decision of this Court has ever so held; and if that result is the necessary deduction from the decisions in which special consideration has been given to reproduction cost, we respectfully insist that the conclusion must be that these decisions have been wrong and should be promptly overruled or modified. We contend, however, that such is not the necessary deduction from the decisions and that the court has not abandoned the rule of *Smyth v. Ames*, but still holds that "fair value" is the rate base and therefore the recapture base and is to be found by giving due consideration to a number of elements or factors, and that it is not a matter of formula but rests in the sound judgment of the Commission as to what is "fair" to the public as well as to the railroads. We recognize that the practical application of this method of determining the rate base or "fair value" bristles with difficulties, but it remains "the law of the land," to which reference is made in the specific requirement of the Transportation Act (sec. 15a, 4) that the Commission "shall give due consideration to *all* the elements of value recognized by the law of the land for rate-making purposes."

If the contention is that the rule of *Smyth v. Ames* can not be applied because due consideration can not be given to *one* of the elements enumerated in the rule except by making that *one* element controlling, then the "rule" of *Smyth v. Ames* is destroyed and the question is what shall be substituted in its place. Certainly nothing has yet been substituted, notwithstanding the decisions in which reproduction cost has been given special consideration under the circumstances of the particular cases in which these decisions were rendered. If something must be substituted, the question is open as to what that substitute should be; and if there is *one* element that should control, it should be "prudent investment" rather than "reproduction cost," varying with the fluctuations of current labor and commodity prices.

We shall enter into no extended discussion here of the merits of "prudent investment" for use as the rate base, because we believe that the rule of *Smyth v. Ames* is still "the law of the land" and that the decision of the commission in the *O'Fallon* case complies with the rule as it was intended to be understood and applied. It also complies with the Transportation Act as it was intended to be understood and applied. The great advantage of the prudent-investment principle is that it can be *rationally* applied. Like "market value" as between a willing seller and a willing buyer, which is the accepted test of the adequacy of compensation for any other alleged taking of private property for public use, "prudent investment" can be determined by rational processes. It avoids the impossibility of applying to property which is not and can not be made the subject of "exchange" elements which (like reproduction cost) are applicable only to the determination of "value in exchange." In addition, "prudent investment" has the great administrative advantage that once ascertained as of a particular date for a particular period, it can be revised for any subsequent date or period by merely checking the official accounts and reports made by the railroads to the Interstate Commerce Commission.

Inasmuch, however, as the Commission has not adopted "prudent investment" as the rate base or "value for rate-making purposes" in the *O'Fallon* case (although it has pointed out some of its advantages) but has adopted a higher valuation than either original cost or prudent investment, we ask the consideration of the court to the many objections to the use of "reproduction cost" as the sole or determining factor for this purpose.

Congress realized the practical difficulty of establishing rates which would allow precisely the amount of revenue required to constitute a fair return on the value of the property. Recognition of this difficulty resulted in the inclusion of the phrase "as nearly as may be" in the portion of the statute under consideration. This is the interpretation which has been placed upon the statute by the Commission.

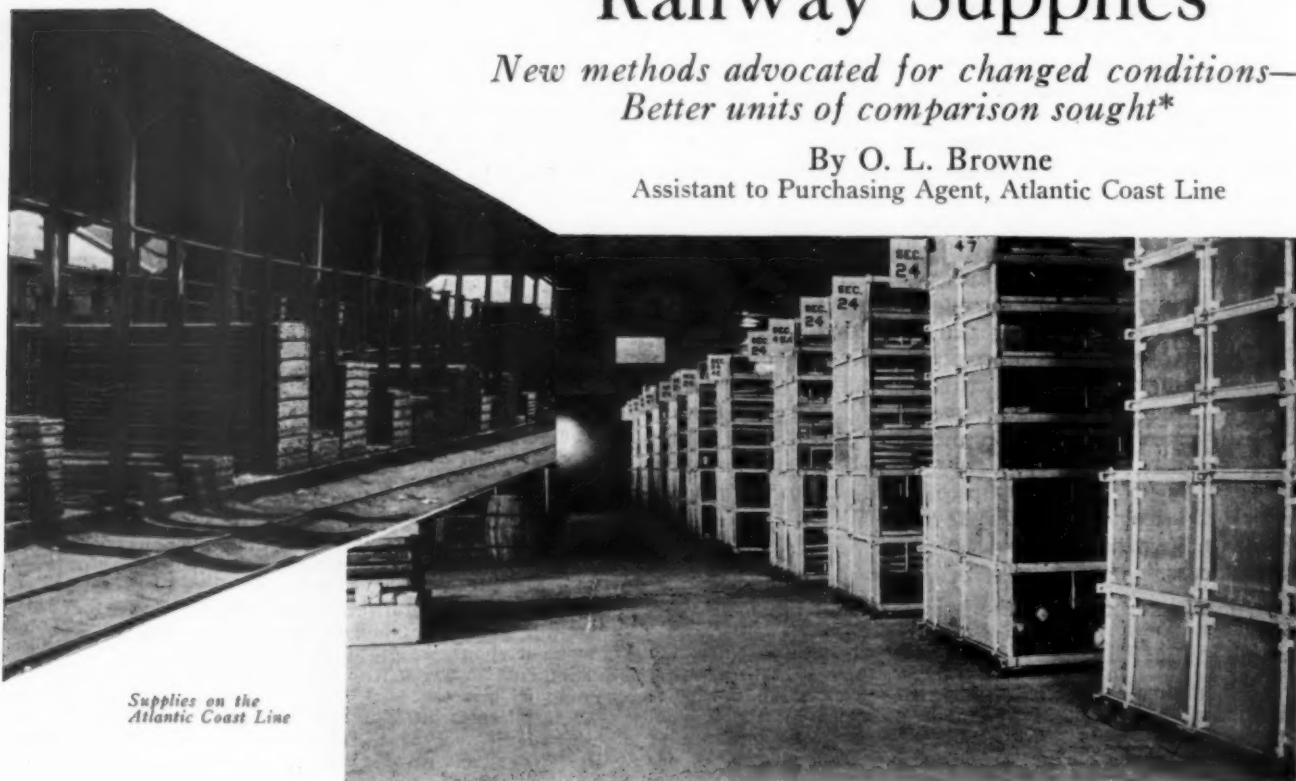
The Commission is only directed to fix rates which it may reasonably expect will produce the fair return contemplated by Congress. The Commission has unquestionably endeavored to accomplish this result. The whole idea that the Act intended anything whatever in the nature of a guaranty is refuted by the Congressional Reports and Debates, and was repudiated by Daniel Willard, President of the Baltimore & Ohio Railroad Company, in the address from which we have already quoted. A brief supporting in general the position taken by the Commission has also been filed for the United States in the name of John G. Sargent, attorney general, and George W. Wickersham, special assistant to the attorney general.

Problems in Accounting for Railway Supplies

*New methods advocated for changed conditions—
Better units of comparison sought**

By O. L. Browne

Assistant to Purchasing Agent, Atlantic Coast Line



*Supplies on the
Atlantic Coast Line*

PRIOR to the invention of bookkeeping, trade was confined to the exchange of one commodity for another. There were no banks and, of course, no checks or drafts. Today accounting fills a most important place in the world's affairs. Business could not carry on without it. It is of so much importance that most governments have set up standards which must be passed by the accountant before he is recognized as competent to perform his duties and a certificate is issued to him.

Stores accounting has been a process of gradual development. In the beginning, no record was made of stores except at inventory time. Later on there was an account to which all material and supplies were charged and to which materials and supplies were credited when used. In some cases this was merely a memorandum kept by a clerk in the office of the master mechanic. As the railroads developed and small roads were consolidated into large roads, the stocks of materials and supplies became larger and more important. It was found necessary to appoint some one to give his entire time to caring for these materials and supplies. The mechanical and maintenance of way forces were so occupied with their work that they did not have time to look after the supplies and so the storekeeper came into being. With a storekeeper charged with the duty of keeping up stock, the accounting department was able to charge the storekeeper with the material he received and credit him with the material issued, checking him with an inventory one or more times each year.

This plan had many advantages, making it possible to

equalize operating expenses because the material could be charged to expenses when it was used, instead of charging it in one sum to expenses when it was paid for. It was also possible to determine at any time the value of the materials and supplies on hand and include it in the balance sheet as an asset. But better supervision was needed and so the storekeeper divided his stock into classes, both in his accounts and when storing it in his warehouse, on platforms or on shelves.

As his duties increased and as his responsibility became larger, the storekeeper soon realized that the old rule of thumb method of ordering material and supplies was not giving satisfactory results. He discovered large stocks of materials on hand which he did not need and was short many things for which he had immediate need. Sometimes he could not find the material when it was needed. Thousands of dollars were tied up uselessly in material, which money should have been in the company's treasury in place of borrowed funds. Decay and obsolescence were costing thousands of dollars and the interest on money invested in material was eating up additional thousands.

In his dilemma he looked around to see what other storekeepers were doing and so about 25 years ago the Railway Storekeepers' Association was formed, which later became Division VI of the A.R.A. Out of this Association have come many new and helpful ideas for the storekeeper. It acquainted him with the results of experiments made by other roads, the successes and failures and kept him informed of new ideas and suggestions made by experienced storekeepers from all sections of the country confronted with many different problems. New methods of ordering material were

* From an address before the Southern and Southwestern Railway Club, Atlanta, Ga., September 20, 1928.

developed. The stock book was improved and became the storekeeper's staff. He learned that past records were good guides for the future. The stock book tells him what material has been ordered, when it was ordered and how much has been used in a given time and is therefore, a guide by which he may order material for future use.

Supply Forces Should Do Own Accounting

Stores accounting, for best results, should be done in the purchase and stores department because the items to be accounted for are of all kinds and shapes which must be translated into dollars and cents and this translation should be made by those acquainted with the material and its use. It is a significant fact that the demand for better stores accounting originates with the purchases and stores department. For best results, the purchasing, storing, delivery and accounting for materials and supplies should be under one authority. The purchasing agent should have under his eyes all the time complete information about the quantity on hand, when it was purchased, when it was received and how long a supply will last, as well as what it will be used for. He should be able to transfer supplies from a point where they are not needed to the point where they are needed. He should not hesitate to turn down a requisition if his judgment and experience tell him that the purchase of the material is not necessary. Real efficiency in buying cannot be exercised without this knowledge and this knowledge is not available quickly enough unless the purchasing agent has charge of the primary accounting. There should be no intermediary between the purchasing agent and the general storekeeper. Divided authority has never produced satisfactory results and in most cases the result is disaster.

During the last few years there has been a strong interest manifested among purchasing agents and storekeepers in a method to compare the purchases and stores department operations of one road with those of another. Committees have painstakingly investigated this question and they have found many difficulties to be overcome before this objective can be reached.

Accounting Practices Differ

Reclamation now occupies an important place in railroad work. It has developed a need for better accounting for usable material. It has been found that different roads have different prices for taking usable material back into stock, varying from scrap prices to prices of new material. This makes it difficult to compare the value of the stock on hand on one road with that on hand on another road. Some roads pay more freight charges than other roads, owing to the distance from the source of supply, adding further to the difficulty of making comparisons. I believe, and my belief is based on experience, that the most satisfactory method of pricing reclaimed material is to use the price of new material, making it possible to have one price for the material instead of two or more prices and also to enjoy the convenience of having one price to charge when material is issued for use. It does away with the possibility of using new material on a ticket for second hand material or using second hand material on a ticket for new material. When material is carried at two different prices it must either be kept separate in two different places so that it may be identified or else it must be tagged. Both of these methods result in additional cost and if kept in different places the facilities for storing material must be increased. The objection has been raised that the accounts will be

distorted by the one price practice but no one would reclaim material which he did not need or would not soon need because this would defeat the object of reclamation. Instead of saving money he would be wasting money. Few, if any, roads are now buying more than they actually need and if the same practice is followed with reclamation, operating expenses will be charged and credited in the same month that the material is reclaimed.

The practice of some roads carrying consignment stock adds further to the difficulty of making comparisons. But there is a demand among purchasing agents and storekeepers for a unit of comparison. They are anxious to know in what way they are deficient and it is only by comparing the results of our own efforts that we can hope to discover our weakness and remedy it. If the ton mile and other measures of comparison are worth anything to the railroads, surely there should be some measure of comparison for the purchases and stores department. Until recently no such measure had been discovered and the measure now most generally used is the stock turnover.

The position of the purchases and stores department in railroad accounting is unique. It is the only large department whose expenses do not appear in a more or less distinguishable manner in the monthly statement of earnings and expenses, although in many cases its operating expenses are larger than those of some of the other departments. They are included, of course, but in such a way that no one can see them. They are distributed among all the accounts to which material has been issued, on the basis of the value of the material issued.

Abolish Stores Expense

The purpose of accounting is not only to keep an account with persons but to keep an account of all the values invested in the business, to record all financial transactions and to show their causes, their effects and the results. "Material Store Expenses", representing the cost of the purchase and stores departments, are distributed among the operating expenses where they are lost sight of, the account is practically destroyed. Changed conditions have made necessary changes in this account. As an illustration it will be remembered that before the inauguration of the stores delivery system it was the practice of the mechanical department to send a helper to the store-room for material. The time of this helper was usually charged to the expense to which the material was charged. With the stores delivery system in operation, the stores department delivers the material to the mechanic in the shop where it is used. There is a division of opinion regarding the account to which the cost of this delivery should now be charged. It seems natural and reasonable that if one is to receive credit for the performance of a duty, he should be willing to assume the obligation that accompanies it. If it is the storekeeper's duty to employ and control the delivery force and receive credit for its efficient performance, he should not object to having the expense charged against him.

An interesting anomaly in the accounts governing purchases and stores, is found in the special instructions of the Interstate Commerce Commission relating to operating expenses. In part, it says, "Materials and supplies includes freight charges of foreign lines, also a proportion of store expenses. See Section 16." Referring to Section 16, we find that the pay and expenses of men employed in purchasing or inspecting a single class of material should be added as stores ex-

penses to the cost of that particular material and that all charges to material stores expense must be cleared at the end of the year. Here we have a small and inconsequential expense carefully added to the cost of the material, plus freight charges, while a much greater expense is summarily disposed of by prorating it among all other expenses.

The railroads are told by the Commission that freight charges must be added to material so that the inventory will not be understated at the end of the year when the recapture law is invoked, yet the charges to material store expenses, a very large sum, which the Commission groups along with freight charges as a part of the cost of materials and supplies, must be cleared at the end of the year. It is not practicable to add all store expenses to the price of material and it is not practicable to add all freight charges to the price of material. It is comparatively easy to add freight to fuel, rail, ties and other bulk material but how can freight be added to a leather washer, a file, a lamp globe and the thousands of small electrical and air brake parts without either under-pricing or over-pricing them? Yet the railroads are spending thousands of dollars annually in a vain endeavor to execute this mandate, which is barren of results because the railroad is its own customer. If it is right to clear material store expense at the end of the year, it seems equally right to clear freight charges on the material.

Improved Accounting Desirable

While storekeeping has made strides in recent years, there yet remains much to be done—notably in accounting for supplies. The purchase and stores department should have a place on the monthly statement of earning and expenses so the executive officers will know what it is costing to purchase and store the material.

There should be a measure of efficiency for comparative purposes and the old account "Material Store Expense" should be abolished. Some say that the cost of buying and handling material is a part of the cost of the material, but is it any more a part of the cost of the material than taxes and insurance are a part of it? Is it not as important to know the cost of operating the purchases and stores department as it is to know the cost of operating dining cars? There should also be less interference in railroad accounts by the Interstate Commerce Commission. The commission should not interfere in the methods by which results are obtained because such interference destroys originality and defeats the efficiency towards which all railroads are striving. Endowed with the necessary authority, the members of Division VI of the American Railroad Association will work out these problems and bring them to an efficient solution.

REVENUE CAR LOADINGS at stations in Canada for the week ended December 15 totalled 71,030 cars, a decrease from the previous week of 4,329 cars and an increase of 3,263 cars over the same week last year.

	Total Cars Loaded	Total Cars Rec'd from Connections
Totals for Canada		
December 15, 1928.....	71,030	40,838
December 8, 1928.....	75,359	41,180
December 1, 1928.....	84,225	39,834
December 17, 1927.....	67,767	34,766
Cumulative Totals for Canada		
December 15, 1928.....	3,590,896	1,983,171
December 17, 1927.....	3,283,647	1,856,025
December 18, 1926.....	3,156,359	1,871,089

Looking Backward

Fifty Years Ago

An official statement shows that on November 1, 1878, there were in operation in the whole of Mexico only 431 miles of railways, with 39 miles in progress and 3,711 miles projected.—*Railway Age*, December 26, 1878.

The St. Louis, Kansas City & Northern [now part of the Wabash] plans the construction of an extension of the Brunswick & Chillicothe from Pattonsburg, Mo., to Council Bluffs, Iowa, which will shorten the route from St. Louis, Mo., to Omaha, Neb., from its present distance of 480 miles to 412 miles.—*Chicago Railway Review*, December 28, 1878.

The Baltimore & Ohio has arranged to run its trains through to New York by the Philadelphia, Wilmington & Baltimore [now part of the Pennsylvania], from Baltimore to Philadelphia, and thence by the Philadelphia & Reading [now the Reading], the North Pennsylvania [now part of the Reading] and the Bound Brook [now part of the Central of New Jersey] to Jersey City. The route will be a trifle shorter than the Pennsylvania and can be placed in operation simply by connecting the Reading and North Pennsylvania tracks.—*Railway Age*, December 26, 1878.

Twenty-Five Years Ago

S. E. Cotter, superintendent of the Eastern division of the Wabash at Peru, Ind., has been transferred to the Middle division, with headquarters at Decatur, Ill. L. F. Loree has resigned as president of the Baltimore & Ohio to accept the position of president of the Rock Island Company of New Jersey, to which position he was elected on December 29.—*Railway Age*, January 1, 1904.

The annual report of the superintendent of the track elevation department of Chicago shows that from May 23, 1892, when the first track elevation ordinance was passed, to December 31, 1903, 81 miles of main track and 420 miles of other tracks have been elevated at a total cost of \$25,445,000. Fifty-seven miles of main track and 280 miles of other tracks remain to be elevated.—*Railway Age*, January 1, 1904.

Ten Years Ago

Joseph B. Eastman, of Massachusetts, has been chosen by President Wilson to succeed George W. Anderson as a member of the Interstate Commerce Commission.—*Railway Review*, December 27, 1918.

Director General McAdoo has made preparations to leave Washington, D. C., about January 4, after he has presented his testimony before the Senate Committee on Interstate Commerce at the hearing which begins on January 2 regarding the disposition of the railroads. Apparently considerable difficulty has been experienced in getting the right man to take the office of director general. It is understood that at least three prominent men, including Franklin K. Lane and Judge Robert S. Lovett, have declined the honor.—*Railway Age*, December 27, 1918.

The Denver & Salt Lake stands out as unique among the railway operations of the United States when it is considered that operation is maintained throughout the year at an average elevation of 8,000 ft. and a maximum of 11,660 ft. under climatic conditions so severe that 19 per cent of all maintenance of way expenses for the six months' period from October to March are for the handling of snow and ice. Principal traffic has to be raised vertically nearly 6,900 ft. and lowered over 8,000 ft. from origin to destination, within a distance of 254 miles, and the movement of 150 cars each way per day requires 40 to 50 engine movements.—*Railway Age*, December 27, 1918.

Communications and Books

Car Loading

CHICAGO.

TO THE EDITOR:

In the editorial appearing on page 915 of your issue of November 10, you have given a number of reasons why the average car loading is not increasing as rapidly as the size of the cars.

I think you will find another reason in the fact that, as the centers of population increase in number and area, the need for railroad transportation of manufactured products automatically decreases. The result is that the railroads bring into these centers large volumes of food and articles to be converted into food and take nothing out but the empty cars. For the same reason, railroads bring in raw material which is converted into a finished product and distributed locally or without the assistance of railroad trains. A study of the coal tonnage also shows that only by unceasing vigilance, assisted by an active demand, can cars be maintained at a full loading up to the visible capacity. Even as it is, many coal cars move with less than the full capacity.

I am, personally, of the opinion that the capacity of the standard box car should be restricted to 40 tons, with the usual 10 per cent margin. It is true that the A. R. A. reports show that, as to certain commodities, a higher average loading than 40 tons is reported, but no distinction is made as between the open and the closed cars. With the exception of grain moving in large volume at one time, such as export grain, I think it is rarely that a grain car is loaded beyond 44 tons.

Would it not be well to have an investigation made to show whether the 50-ton box cars are worth while?

T. C. POWELL, President,
Chicago and Eastern Illinois.

New Book

Principles of Scientific Purchasing, by Norman S. Harriman. Bound in cloth, 301 pages, 6 in. by 9 in. Published by McGraw-Hill Book Co., Inc. Price \$3.00.

Mr. Harriman's book on purchasing is the second published by the author this year and like its predecessor, "Standards and Standardization," forms one of a series of books on industrial management by the publishers. The book is not altogether an original work, for it contains chapters, which, as indicated by appropriate footnotes, are reprinted from other sources, but it shows a studious effort on the part of a man of considerable experience in the technique of industrial purchasing, to set forth principles and to outline procedure which should be known and followed in modern purchasing. The relations between value and price, of commodity supplies and demand to prices, of prices to production costs are discussed in the book; also the relation between scientific purchasing and business efficiency, the graphic presentation of data and the relation of buying to inventories. In a chapter on the financial aspects of purchasing, the author discusses the knowledge of finances necessary to scientific purchasing, whether purchases should be made from a single, or several sources, the question of credit and resources, the advantages of long and short term contracts, the payment of invoices. The place of strategy in purchasing is discussed, also the study of salesmen, and there are chapters on the laws to be considered in purchasing, on standards and specifications, organization and procedure for scientific purchasing, inspections and tests, and budgetary control of purchase operations. A chapter is also devoted to the control of purchase operations by statistics and trade data, and detailed information is furnished on the purchasing procedure of large organizations, for example, that of the U. S. Navy, the Western Electric Company and the New York Central Lines. While there is considerable comment in the book which is typical of discussions in other books on purchasing, much of the information is different. The book is

well written throughout, and constitutes a valuable contribution to the study of purchasing problems.

Books and Articles of Special Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian,
Bureau of Railway Economics, Washington, D. C.)

Books and Pamphlets

Notes from the West. Observations of the president of the State Bank of Kit Carson, Colo., on the railroad situation, particularly motor competition. Bache Review, December 8, 1928, p. 4.

The Reign of the House of Rothschild, by Count Egon Caesar Corti. Valuable for "background" in connection with European railway history. 457 p. Pub. by Cosmopolitan Book Corporation, New York City, \$5.

Statistical Abstract for the Several British Oversea Dominions and Protectorates in Each Year from 1911 to 1913 and 1922 to 1925. "Railway Mileage" (government and private), p. 59, "Receipts" p. 60, "Working Expenditure" p. 71, "Railway statistics" p. 62-64. 279 p. Pub. by H. M. Stationery Office, London, England. 5 shillings. Available in this country at British Library of Information, New York City.

Proceedings of the National Association of Manufacturers, 23d Annual Meeting, 1928. "Transportation" p. 124-173 includes papers on transportation and economic development by S. P. Bush, E. B. Leigh, Samuel O. Dunn, Frank W. Noxon, Landon C. Bell, Adolph Mueller, C. R. Burnett, and S. F. Heckert. 435 p. Pub. by National Association of Manufacturers, New York City.

The Future of the Railways, by Ashley Brown. Locomotive efficiency, fares, schedules, staff and wages are discussed with this conclusion: "... remote, but inevitable, there looms the day when aircraft and the motor, working in unison, will destroy the railway as utterly as the railway destroyed the stage coach. For us there remains the present; that we shall be equal to the demands of our own time is as much as we may hope for." p. 69. 70 p. Pub. by Simpkin, Marshall, Ltd., London, England. One shilling, sixpence.

Periodical Articles

A Proposed Eurafican Tunnel. Latest discussion of the possibility of a railway tunnel beneath the Straits of Gibraltar. Literary Digest, December 22, 1928, p. 14.

The Lake Superior & Ishpeming Railroad, by Charles H. Gaskill. An illustrated history of the railroad and of iron ore transportation in the Lake Superior district. Baldwin Locomotives, January 1929, p. 38-49.

The St. Louis-San Francisco Railway and Its Motive Power, by Paul T. Warner. An historical survey, of which this is part I. Illustrations and map. Baldwin Locomotives, January, 1929, cover and p. 2-22.

Wages and the Collective Wage Bargain, by S. S. Garrett. An inquiry into the commonly accepted account of the relation between collective bargaining and wages. American Economic Review, December 1928, p. 670-683.

High Speed Transport, by G. B. Howden. Speeds attained and attainable on railways, highways, sub-ways, and mono-railways. The speeds on some of the older railways are astonishing. Journal of the Institute of Transport, December 1928, p. 89-100.

Some Problems of Statistics of Accidents as Illustrated by the British Statistics, by J. W. Nixon. Discusses what and when are accidents of various kinds on railways and in industry generally, the classification of causes of accidents, difficulties of terminology, measurement of risk, etc. International Labour Review, December, 1928, p. 731-759.

Odds and Ends of Railroading

Railway Songs

R. S. Van Sant, editor of the Baltimore & Ohio magazine, is preparing an anthology of the songs railway men sing or have sung in the past. He would appreciate it if railroad men would send to him, in care of his publishers, Greenberg, Inc., 112 East 19th street, New York, any songs of this kind that they know.

Dusting Off the Old Ones

Junius Wood, Russian correspondent of the Chicago Daily News, in riding through Siberia, heard the following yarn told by an old peasant:

"The other day, I was riding on the Caucasus Railway to Smolatsk. The engineer stopped the train to chase a cow off the track. We started up again and, after an hour, he stopped again to chase a cow off the track. It was the same cow."

This ancient yarn has been told in this country for years, but how did it get into the hinterland of Siberia?

Railway "Howlers"

The Railway Gazette reports the following replies, by school-boys, to questions asked them, as contained in a book called "Howlers," an anthology of such things:

In 1800 railway services still ran between big towns.

A conjunction is a place where two railway lines meet.

Plato is the god of the Underground Railways.

Robert Louis Stephenson first invented railways.

Britain is divided into three parts, London, Midland & Scottish.

Fast Run Recalled

The death on December 16 of George W. Stevens at Elyria, Ohio, will bring to the minds of the elder generation of railroaders the fast run from Chicago to Buffalo, N. Y., on the Lake Shore & Michigan Southern when Mr. Stevens was superintendent of motive power of that railroad just before the close of the past century. On this run on October 24, 1895, from One Hundredth street, Chicago, to Buffalo creek, 2 miles west of the station at Buffalo, a total distance of 510.1 miles, with an actual running time of 7 hours, 50 minutes and 20 seconds, or 470.33 minutes, the average speed was 65.07 m.p.h.

Such a train speed broke all previous records for a like distance. On the Eastern division, from Erie to Buffalo Creek, 86 miles, the speed averaged 72.91 m.p.h. The five locomotives used were ten-wheelers designed under Mr. Stevens' direction as superintendent of motive power and the train consisted of two parlor cars and a business car, weighing a total of 152 tons. In reporting the run the *Railway Age* observed that "if anything had happened to the train the Lake Shore would have had to get an entire new set of officials from top to bottom." In the party were the president, the assistant general manager, the general superintendent, the assistant general superintendent, the consulting engineer, two division engineers, a general freight agent, the purchasing agent, the superintendent of motive power, the general master car builder, the superintendent of car construction and the president of the Wagner Palace Car Company.

Hope for the Desponding

Cheer for the weary owners of railroad stocks, who have seen Brookhart's guaranty of carrier net earnings returned from the bank marked "N.G.," who have despaired of the Hoch-Smith scheme for the concurrent relief of agriculture and transportation ever working in more than one direction, is at hand. The Interstate Commerce Commission, at long last, has taken an heroic stand. It has resolutely refused a Hoch-Smith reduction in the rates on bung-stoppers. As the Commission

tersely implies in three foolscap pages of single-spaced type-writing, there may be other reasons than Messrs. Hoch and Smith why the rates on bung-stoppers should not enjoy a status based on lumber rates. They are made from rough one-inch lumber, planed on both sides and eventually put through a bung-cutting machine, but the record indisputably establishes that they are never sand-papered. Complainants in the case compare bung-stoppers with spokes, broom-handles and bed slats, whereas the defendant railroads insist they are more nearly comparable, at least in certain respects, with such other fifth-class articles as boilers, green salted hides, floor tiles, pickles, insulators and iron pipe. This newspaper agrees heartily with the Commission that all this tends powerfully to support the reasonableness of existing rates on bung-stoppers. But there is a more compelling consideration to the same end, which cannot be better stated than it is in this paragraph from the decision.

"The Hoch-Smith resolution contemplates readjustments of the rate structure along lines which will permit commodities such as this that can stand maximum reasonable rates to bear them, and which will accord to agricultural products a rate basis which is as low as we may reasonably go under existing law. At the same time it is our duty to maintain carrier revenues reasonably intact in the absence of evidence that these revenues are excessive."

That the commission will maintain carrier revenues reasonably intact no honest man can doubt. If firm rates on bung-stoppers will not do it, a stiff advance in the rates on bung-holes will turn the trick.—*Wall St. Journal*.

A Musical Kitchen

When Joseph Thomas, chef on the business car of Carl R. Gray, president of the Union Pacific, starts banging pots and pans in the kitchen, one is never certain whether the result will be food or music. Joe has fashioned according to his own design 26 musical instruments and a number of them have been made from ordinary cooking utensils. His musical kitchen contains a guitar made from a frying pan, a baking pan ukulele and a sauce-pan mandolin. The flour sifter has been



converted into a reed instrument similar to a double-reed harmonica, a mixing pan is a mandolin, the dish pan produces tones like a zither and the broom and dust pan together form a 'cello. The broiler, upon closer inspection, turns out to be a guitar, the tea kettle is a reed instrument with 50 keys, which is played by blowing into the spout and the stove has been converted into a reed organ.

NEWS of the WEEK



Southern Pacific Trains on Mississippi Car Ferry.—Galloway Photo.

A BILL HAS BEEN PREPARED for consideration by the Board of Aldermen of St. Louis, Mo., which would require that no motive power but electricity be used by railroads within the city limits of St. Louis after January 1 1930.

THE NEXT MEETING of the New York Railroad Club will be held on January 18 at 29 West 39th Street, New York City, with a paper on "Oxygen The Wonder Worker" by A. G. Harcke.

THE RAILWAY CLUB of Greenville, Pa., will hold its next meeting on January 15 at 6:15 p.m. with a paper by H. T. Porter, chief engineer of the Bessemer & Lake Erie, on the Porter cut-off.

THE NEW ENGLAND RAILROAD CLUB will hold its next meeting at the Copley Plaza Hotel, Boston, on Tuesday evening, January 8, with a paper by Edward Dahill, chief engineer of the Freight Container Bureau, on Modern Packing and Container Practices.

SENATOR WATSON, of Indiana, has introduced in the Senate a bill, S. 5047, to amend the four subdivisions of section 10 of the interstate commerce act to provide for a minimum penalty of \$500 for such offenses as violations of commission orders, false billing and inducing unjust discrimination. Such an amendment was recommended by the Interstate Commerce Commission in its annual report.

THE CENTRAL RAILWAY CLUB OF BUFFALO will hold its fortieth annual banquet at Hotel Statler, Buffalo, on Thursday evening January 10 at 6:30. There will be addresses by Samuel O. Dunn, editor of the *Railway Age* and Reverend G. A. Leichter of Buffalo. Old Southern melodies will be sung by the Pullman Porters Colored Quartet of Chicago. The annual meeting of the club for the election of officers will be held in the Statler at 2 p. m.

THE PACIFIC COAST RAILWAY has applied to the Interstate Commerce Commission for authority to remove tracks from the right-of-way of the Southern Pacific Company, at Guadalupe Station,

Santa Barbara County, Calif. In its application in Finance Docket No. 7318, made public December 21, the carrier states that upon discontinuance of the use of the right of way it proposes to operate a line of motor coaches between Santa Maria and Guadalupe, including passenger service to and from Southern Pacific trains.

THE CHICAGO, ROCK ISLAND & PACIFIC has taken over and will operate, effective January 1, as a part of its dining car department, all hotels, restaurants and lunch rooms on the line which have heretofore been operated by the Van Noy Interstate Company. The Rock Island will operate hotels and restaurants at Bureau, Ill., Booneville, Ark., and Forrest City, Liberal, Kan., McFarland and Pratt and Chickasha, Okla., and lunch rooms at Albert Lea, Minn., El Reno, Okla., and Sayre, Tucumcari, N. M., Rock Island, Ill., Des Moines, Iowa, Belleville, Kan., and Herington, Trenton, Mo., and Little Rock, Ark.

Sunshine Special Derailed

One passenger was killed and 21 persons were injured on December 23, when a rail broke under the "Sunshine Special" on the International-Great Northern between Prices, Texas, and Neches, 65 miles south of Longview, derailling and overturning nine cars. The rail that broke was of 85-lb. section, laid in 1919.

E. I. Lewis Elected Chairman of I. C. C.

Pursuant to the policy adopted January 13, 1911, E. I. Lewis has been elected chairman of the Interstate Commerce Commission, succeeding Commissioner J. B. Campbell, effective January 1, 1929, for the ensuing year.

The new chairman has been, and will continue to be, the commissioner in charge of the valuation of railroads. The primary valuation has practically been completed and the work of bringing the valuations up to a common date has begun and is being prosecuted with vigor. The new chairman was the wartime chairman of the Indiana Public

Service Commission and was appointed to the Interstate Commerce Commission by President Harding in 1917 and later reappointed by President Coolidge.

Hearing on 13-Month Year

Testimony in support of the proposal for an international conference to consider a simplification of the calendar was given at a hearing before the House committee on foreign relations on December 20 by C. R. Dugan, assistant to vice-president of the New York Central, who described some of the difficulties in handling statistics when some months have four Saturdays and others five. The benefits of a uniform basis, he said, would be reflected in many practical ways.

Highway Regulation Bill Introduced

Chairman Parker, of the House Committee on Interstate and Foreign Commerce, on December 20 introduced the revised bill for the regulation of motor bus transportation, which represented a compromise agreement of the railroads, state commissions and manufacturers and operators of motor vehicles. It is H. R. 15,621.

A similar bill has also been introduced in the Senate by Senator Watson, chairman of the Senate committee on interstate commerce, as S. 5085.

Conciliation Board in C. P. R. Firemen's Case

The Canadian Minister of Labor at Ottawa has established a board of conciliation and investigation, under the Industrial Disputes Act, to deal with a dispute between the Canadian Pacific and its locomotive firemen on its eastern lines. The board was rendered necessary because the company and the firemen could not agree on the adoption of a proposed revision of the schedule.

R. L. Calder, Montreal, has been appointed to the board by the minister, acting on the recommendation of the employees, while Isaac Pitblado, Winnipeg, has been named on the company's recom-

mentation. These two members are instructed to confer within five days and name jointly the third member, who will be chairman.

New W. & A. Tunnel Completed

The new tunnel on the Western & Atlanta at Tunnel Hill, Ga., 1513 ft. long and 22 ft. high, was put in service on December 17, with public ceremonies participated in by state officials, members of the legislature, the mayors of Atlanta and Chattanooga, and other visitors. This tunnel, which has been made to take the place of one which has served since 1848, has been constructed by the Nashville, Chattanooga & St. Louis, the operating company, under the contract between this company and the state of Georgia, owner of the railroad, which provides that the operating company shall make certain expenditures for permanent improvements.

The tunnel was turned over to the state by J. B. Hill, president of the Nashville, Chattanooga & St. Louis, and was received on behalf of the state by A. J. Woodruff, vice chairman of the State Public Service Commission.

New York State Highway Crossings

Protesting against regulations which have been prescribed by the New York State Public Service Commission, Joseph Rosch, on behalf of 13 railroads of the state, has presented an argument before the commission averring that the inclusion of extensive improvements not actually required for the change of grades will so increase the cost of the elimination of dangerous crossings that the three-hundred-million-dollar bond issue of the state will fall far short of providing the improvements which were contemplated when it was authorized. Mr. Rosch estimates that under the scheme approved by the commission, there will be 450 dangerous grade crossings left in their present condition for lack of funds, which crossings ought to have the benefit of the special bond issue.

CONSTRUCTION OF A BROAD GAGE RAILWAY BETWEEN LONDON AND PARIS, involving a tunnel under the English Channel, is now under consideration according to an article outlining such a proposal in a recent issue of *Modern Transport* (London). The estimated cost of the project is the equivalent of approximately \$925,000,000.

The proposal is for the construction of an entirely new line of seven-foot gage, capable of accommodating 550-ton trains to be hauled by electric locomotives at a maximum speed of 120 miles per hour. At this rate it is anticipated that an average speed of 92 miles per hour could be maintained and thus the journey between London and Paris would be completed in about two hours and 45 minutes.

According to published details the new railway would be 253 miles in length with four lines from London to the tunnel entrance but with only two of these passing through the tube. A like arrangement of four lines would be provided on the French side from Paris to the entrance of the tube.

Traffic

The Eastern Ohio Coal Operators' Association, the Fayette-Greene Coal Producers' Association, and other representatives of Ohio and Pennsylvania coal operators, have asked the Interstate Commerce Commission to suspend the compromise lake cargo coal rate tariffs filed by the railroads to become effective on January 1.

At the annual meeting of the Transportation Club of Louisville on Dec. 19, the following officers were elected for the ensuing year; president, J. J. Donohue, general claims attorney of the Louisville & Nashville; vice president, Henry L. Burch, traffic manager of the Kentucky Rock Asphalt Company; secretary, S. A. Cash, traffic manager of B. F. Avery & Sons; and treasurer, Wm. T. Vandenberg, commercial agent of the Seaboard Air Line.

The Missouri Public Service Commission has ordered an investigation into intrastate freight rates on the 36 railroads operating in the state, with a view to fixing maximum local and joint class rates; but the order excepts a dozen chief commodities; grain and grain products, coal, forest products, livestock, cement, sand, gravel, crushed stone, face, building and common brick, agricultural limestone, petroleum and its products, barnyard manure, cotton and cotton seed, cereal beverages, hay and straw.

The Louisville & Nashville, on December 24, discontinued the operation of the "Humbolt Accommodation," train between Memphis, Tenn., and Humbolt, 45 miles, thereby completing the final chapter in the life of this 55-year-old train, established on the Memphis & Ohio which was purchased by the L. & N. in 1872. The action was taken following a court hearing at Nashville when an injunction was granted the L. & N., forbidding interference by the Railroad and Public Utilities Commission of Tennessee with its discontinuance.

Pacific Northwest Shippers' Board

According to reports submitted at a meeting of the Pacific Northwest Advisory Board at Portland, Ore., on December 14, an era of prosperity for the Pacific Northwest is in prospect; there will be increased activity in most major lines; brighter days for agriculture are in the offing; and the condition of the livestock industry will continue to improve. Among the industries which will show substantial gains in volume the coming months, are lumber, iron and steel, wool and woolen products, concrete and concrete products, paper and pulp, and canned and fresh fruits and vegetables. In a total of 34 separate commodity classifications, the estimates for car loadings for the first quarter in 1929 show material gains over the volume of the corresponding quarter of 1928.

Officers elected for the coming year are:

chairman, A. W. Cooper, secretary-manager of the Western Pine Manufacturers Association, Portland, Ore.; vice-chairman, Frank H. Lamb, president of the Lamb-Grays Harbor Company, Hoquiam, Wash.; and executive secretary, J. A. Swalwell, chairman of the board of the Dexter Horton National Bank, Seattle, Wash. The next quarterly meeting will be held in Tacoma, Wash., during March.

I. C. C. Asked to Approve Express Operating Agreement

Application for approval by the Interstate Commerce Commission of a form of operating agreement between the principal railroads and the Railway Express Agency, Inc., for the future conduct of the express business as agent for the railroads has been filed with the commission. The application was filed by W. B. Storey, W. W. Atterbury, P. E. Crowley and C. R. Gray as agents for the participating roads, and by the Express Agency, a new Delaware corporation formed to take over on March 1 the properties of the American Railway Express Company now used by it in its express transportation operations.

Under the plan the Express Agency is constituted a railroad-owned joint facility and the new operating agreement provides for substantially the same method of conducting the express business and the same accounting method as the uniform express contract, and the amended uniform express contract with the American Railway Express Company, which were approved by the commission and have been in effect since 1920, including the pooling arrangement by which the express transportation revenues and expenses are dealt with by four groups of carriers, Eastern, Southern, Western and Mountain-Pacific.

Article V of the agreement provides for the ascertainment of the income accruing from express operations within each group and the deduction from such group income of the operating expenses, taxes and other charges, as defined in the agreement, of the group. The entire balance remaining among the carriers of the group is to be distributed in the proportion that the gross transportation revenues on other than carload business, earned on the line of each carrier, bears to the gross express transportation revenues on other than carload business earned on the lines of all such carriers in that group.

The new company will have 1,000 shares of stock without par value, divided among the participating railroads in proportion to the amount of express business they have been handling, and will operate without profit or compensation.

SPECIAL LOW RATES for the transportation of tourists' automobiles, whereby travelers who wish to avoid long drives between centers of their interest may be accommodated, have recently been inaugurated by the French railways. The concessions apply from Calais, Dieppe, Boulogne and Dunkirk to the resorts of southwestern France.

Equipment and Supplies

THE ILLINOIS CENTRAL has authorized the purchase of 15 eight-wheel switching locomotives, 700 automobile cars of 40 tons capacity and 40 ft. long, 300 automobile cars of 40 ton capacity and 50 ft. long, 750 hopper cars of 50 tons capacity, 750 hopper cars of 70 tons capacity, 200 flat cars of 50 tons capacity, 45 ft. long, 25 caboose cars 28 ft. long, six combination mail cars with 15 ft. compartment, five baggage and express cars 70 ft. long, five horse express cars 70 ft. long, 10 coaches 70 ft. long, eight chair cars 70 ft. long.

Locomotives

THE MISSOURI PACIFIC has ordered 25 eight wheel switching locomotives from the Lima Locomotive Works.

Freight Cars

THE CHICAGO & NORTHWESTERN is inquiring for 1,000 gondola cars of 70 tons capacity and 1,000 automobile cars.

THE VIRGINIAN has ordered 500 hopper cars of 60-tons capacity from the Virginia Bridge & Iron Company.

THE NEW YORK CENTRAL has ordered 100 gondola cars from the Merchants Despatch. Inquiry for this equipment was reported in the *Railway Age* of December 8.

THE READING has ordered three double power plant combination passenger, baggage and mail, gas-electric rail motor cars, from the J. G. Brill Company.

THE CHICAGO, INDIANAPOLIS & LOUISVILLE has ordered 10 steel underframe caboose cars from the American Car & Foundry Company.

THE LEHIGH & NEW ENGLAND has given a contract to the American Car & Foundry Company to make repairs to 200 steel hopper cars.

THE LOUISVILLE & NASHVILLE has ordered 1200 gondola cars from the Pressed Steel Car Company, 750 automobile cars from the Mt. Vernon Car Manufacturing Company, 300 box cars from the Pullman Car & Manufacturing Corporation and 250 mill type gondola cars from the Mt. Vernon Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of December 8.

Passenger Cars

THE UNION PACIFIC is inquiring for 5 dining cars.

THE ATCHISON, TOPEKA & SANTA FE is inquiring for 14 mail and baggage cars.

THE DETROIT & MACKINAC has ordered one single power plant combination passenger, baggage and mail, gas-electric rail motor car, from the J. G. Brill Company.

Signaling

THE CANADIAN NATIONAL has ordered from the Union Switch & Signal Company a mechanical interlocking, 14 levers, for Queen's Wharf crossing, Toronto, Canada.

THE AMERICAN LOCOMOTIVE COMPANY has ordered from the Union Switch & Signal Company for use on the Delaware, Lackawanna & Western, 20 locomotive equipments for automatic train control.

THE CHICAGO, NORTH SHORE & MILWAUKEE has ordered from the Union Switch & Signal Company the track-circuit materials required for the control of automatic crossing gates for 26 locations on its line. The order includes 79 single impedance bonds, 60 a.c. relays, 40 track transformers, 26 copper oxide rectifiers, and other things.

Iron & Steel

THE MISSOURI PACIFIC has ordered 151,000 pairs of angle bars, 24,000 kegs of spikes and the necessary tie plates and other track fastenings for use in connection with the laying of the 55,800 tons of rails recently ordered, as reported in the *Railway Age* of December 15. Contracts for the track material were placed with the Bethlehem Steel Company, the Sheffield Steel Company, the Scullin Steel Company, and the Railroad Supply Company.

Miscellaneous

THE PERE MARQUETTE has given an order to the Manitowoc Shipbuilding Corporation, Manitowoc, Mich., for the construction of two high speed car ferries for use on Lake Michigan; the boats to be turbine propelled, twin-screw, electrically operated. Each propeller will be driven by a slip-ring induction motor of 3,600 hp. The boats will draw 16 ft. of water and will carry each, 28 freight cars.

THE SOUTHERN RAILWAY OF GREAT BRITAIN has recently placed an order for 70,000 steel ties which will be used to replace the present wood ties on approximately 35 miles of track. The order is described as the initial step in the adoption, by the Southern, of the steel tie in preference to that of wood.

The new ties will differ from the usual type of steel tie which has heretofore been used in India, South America and Continental European countries since these latter accommodate the flat bottom style of rail. The Southern's order is for ties to support the bull-head rail which requires a chair and this chair is to be an integral part of the new tie.

The cost of each steel tie is to be about \$3.75 while the installation of the 70,000 is expected to extend over a two-year period.

Supply Trade

R. L. Matthews, formerly representative of the National Electric Products Corporation, has been appointed representative of the **Wagner Electric Corporation**, with headquarters at Chicago.

The **Hisey-Wolf Machine Company**, Cincinnati, Ohio, has opened a branch office at 549 Washington Blvd., Chicago, with **Roy D. Haworth** in charge as direct representative. This company plans to open offices in other principal centers in the United States from time to time.

The **Cincinnati Car Corporation**, Cincinnati, Ohio, now makes a complete line of industrial locomotives in gasoline, gasoline-electric, Diesel, electric trolley and storage battery types. These locomotives will be furnished in a variety of sizes from small two and three ton units up to 50-ton, or larger, and in various track gages, suitable for handling either small or large industrial cars, as well as for switching railroad cars.

The business of the **Niles Tool Works Company** formerly owned by the Niles-Bement-Pond Company, and the Hooven, Owens, Rentschler Company, both of Hamilton, Ohio, are now consolidated under the ownership of the **General Machinery Corporation**. The officers and directors of the General Machinery Corporation are: G. A. Rentschler, president; William B. Mayo, vice-president; A. A. Byerlein, vice-president; Curtis T. Zeigler, vice-president; Walter A. Rentschler, secretary and treasurer; Gordon S. Rentschler, Edward A. Deeds, Fred B. Rentschler, J. K. Cullen, G. H. Helvey, C. H. Helvey, Leonard S. Horner, and Sanford G. Etherington.

Joseph Leidenger, vice-president of the **Dayton Manufacturing Company**, will retire from active service on January 1. Mr. Leidenger has been in the railway equipment business continuously for 47 years, starting with Post & Company, of Cincinnati, in 1881, where he remained for seven years. In 1888 he went with the Dayton Manufacturing Company as sales representative. In 1918 he was elected vice-president and director and has been in charge of the company's eastern business with office at 25 Church street, New York City. He will continue to be affiliated with the company on the board of directors. **George Shields**, for the past ten years sales representative of the Dayton Manufacturing Company, has been transferred to New York City as eastern sales manager with office at 25 Church street. Before going with the Dayton Manufacturing Company Mr. Shields was connected with the American Car Company, of St. Louis.

Archie H. Dick, who has been in the service of the American Locomotive Company and its subsidiary, the American Locomotive Sales Corporation, for the last 25 years has resigned as South American representative. Mr. Dick was born in Glasgow, Scotland, on April 26, 1887, and came to the United States with his parents when a boy. He entered the employ of the American Locomotive Company in Schenectady in 1903, where he became elevation draftsman in 1907, which position he left to attend Union College, Schenectady. In 1913 he was appointed technical representative of the American Locomotive Company for the west coast of South America, where he spent two years erecting and installing locomotives in Peru, Bolivia and Chile. In 1915 he was transferred to Buenos Aires as representative and later in the same year was appointed South American representative with headquarters in Rio de Janeiro, Brazil. In March, 1922, in addition to his work for the American



Archie H. Dick

Locomotive Company, he was appointed representative in Brazil for the American Car & Foundry Export Company. During the last 13 years Mr. Dick introduced into Brazil the first modern American design of Pacific and Mikado type locomotives to be used on Brazilian Railways. He was instrumental in securing the adoption by the Brazilian government of an official nomenclature of locomotive parts, in the Portuguese language; also in introducing the first locomotives to burn successfully Brazilian native coal, and in bringing into Brazil the first all-steel, modern, American design of passenger cars, more of which are now being supplied both to the Paulista and Central of Brazil railways. Mr. Dick has been closely associated with the establishment of the Portland Cement industry in Brazil and is a director in the company now operating in Sao Paulo.

Obituary

Thomas F. Kent, vice-president of the Magnus Company Inc., New York City, died at the Presbyterian Hospital, New York, on December 25. Mr. Kent was born at Detroit, Mich., on October

14, 1874, and received his education at the Jesuit College in that city. After leaving school, he entered the employ of the Detroit Car Wheel Company, at Detroit, and left that company to work for H. H. Hewitt, who was general



Thomas F. Kent

manager of the Union Car Company, Depew, N. Y. In 1901 Mr. Kent entered the employ of the Magnus Metal Company, being manager of the Jersey City Plant, and was later transferred to the St. Louis plant, at which works he was manager for a number of years. In 1919 Mr. Kent's activities were transferred to the New York office where he was located up to the time of his death.

H. R. Hobart, First Editor of Railway Age, Dies

Horace Reynolds Hobart, one of the founders and for 31 years, from 1876 to 1907, editor, co-editor and contributing editor of the *Railway Age* (merged in 1908 with the *Railroad Gazette* into the *Railway Age Gazette* and later shortened to the *Railway Age*), died at the North Shore hotel, Evanston, Ill., on December 16 of pneumonia at the age of 89 years. He personally carried the greater part of the burden of the editorial work of the *Railway Age* for 22 years, from the appearance of the first issue in June, 1876, until his retirement from active editorial responsibility in January, 1898.

He was a prolific writer and at the time of his retirement it was estimated that his writings on railway subjects would have filled 50 sizeable volumes. He was characterized by one of his long-time associates as possessing the genial kindliness of a gentleman and the ideals and temperament of a scholar. He was a master of the use of English, not always employing that of everyday conversation, but using that recognized by the best writers and that which would express the writer's meaning without question or qualification. He was not a rapid writer and used dictation only in matters that had been carefully thought out, in both substance and form. His preference in editorial writing was a half-sheet pad with his knee for a desk—a practice perhaps suggested by the fact that his desk was otherwise much occupied with clippings and other data to be worked up for future editorials. But his copy, when it was passed

along to the printer, was completely finished and there was little call for revision or correction.

When he gave up his duties as editor a sketch of his career appeared in the *Railway Age*, which said in part:

"In *The Railway Age* of June 13, 1896, there was published, under the title of 'Twenty Years of Railroads,' a summary of retrospect of the growth of the railways of the United States in the last two decades. The article was signed 'Horace R. Hobart.' Mr. Hobart was thoroughly qualified to handle his subject, because for just twenty years—or since the first issue of *The Railway Age* appeared in June, 1876—he had personally borne the greater part of the burden of the editorial work on this paper.

"Since then two more years have passed; and now Mr. Hobart leaves *The Railway Age*. For the last six months—since January 1, 1898—he has taken no active part in the conduct of the paper, though the series of 'Letters from Mexico' over his familiar initials have shown that he has not been idle. This week he de-



H. R. Hobart

taches himself finally from the office. He does it not because the office would not gladly keep him, nor because he has the interest of *The Railway Age* any less at heart than heretofore. But journalism is the most exacting of all vocations, and after 22 years of such work as Mr. Hobart has done in one office a man is entitled to a rest and he cannot but wish to turn to some less laborious life. It will not be a less active life that Mr. Hobart turns to—indeed it will be less sedentary and more active; but it will be free from the daily thralldom of fixed hours and pitiless, regular measures of work—free from the ever-present shadow of the toil which has to be accomplished at a certain hour because nothing (not sickness nor pleasure nor other duties) can be suffered to cause the paper to be late in coming out.

"For 22 years Mr. Hobart has never willingly allowed *The Railway Age* to preach one word of what he did not believe to be sound doctrine and good morals in railway matters. And it has not been in the internal affairs of railways alone that he has labored always for righteousness, but in all the public questions affecting railway interests he

has worked unceasingly for justice and the truth."

Mr. Hobart was born at Beloit, Wis., on May 22, 1839, and graduated from Beloit College with the degree of bachelor of arts in 1860 and with the degree of master of arts in 1863. After finishing college he became a school principal in Illinois, then serving during 1861 and 1862 in the Civil War as a private and as a battalion quartermaster with the First Wisconsin Cavalry where he was wounded in battle.

In 1866 Mr. Hobart entered newspaper work as a reporter on the Chicago Tribune. The following year he was appointed city editor of the Chicago Evening Post and in 1870 he became western

manager of the American Press Association. At the same time he served from 1870 to 1873 as managing editor of the Chicago Evening Mail. In 1874 he became editor and joint owner of the Jacksonville (Ill.) Daily Journal, returning to Chicago in 1876 as editor of the Chicago Morning Courier. In that same year Mr. Hobart became one of the joint founders of the *Railway Age*, serving from 1876 to 1891 as editor and from 1891 to 1898 as co-editor. He then retired from active editorial management, although he served until 1907 as contributing editor. He was also, during his connection with the magazine, vice-president and a director of the Railway Age Publishing Company.

Construction

ATCHISON, TOPEKA, & SANTA FE.—See item in financial news department.

CANADIAN PACIFIC.—This railroad has agreed to contribute \$100,000 toward the cost of constructing the proposed Burrard Street bridge over False creek at Vancouver, B. C., which will provide a railroad crossing of the creek on the lower deck as a substitute for the present Kitsilano trestle. The provincial government has agreed to contribute \$200,000 of the cost. The total cost of a double-deck railway and highway bridge, which will be about 2,700 ft. long, is estimated at \$3,180,000.

CENTRAL PACIFIC.—See item in financial news department.

DAYTON UNION.—The three owners of this company, the Pennsylvania, the Cleveland, Cincinnati, Chicago & St. Louis and the Baltimore & Ohio, and the Erie have approved the project for the elevation of tracks in the vicinity of the Union Station at Dayton, Ohio. The cost of the elevation, which will eliminate grade crossings at South Wayne avenue and East Third, East Fifth, Wyandotte, Stone, South Jefferson, South Main, South Ludlow and South Perry streets, will be approximately \$7,500,000.

ILLINOIS TRACTION SYSTEM.—(St. Louis Electric Terminal Railway)—The Missouri Public Service Commission has granted a certificate of convenience and necessity to this company for the construction of its proposed freight and passenger terminal at Twelfth Boulevard and Lucas Avenue, St. Louis, Mo.

INDIANAPOLIS UNION.—In accordance with an agreement between this railroad and the Indianapolis (Ind.) board of works, the latter body on December 10 ordered the railroad to proceed with its track elevation, which is expected to involve a total expenditure of \$10,000,000. The project calls for the elevation of tracks from West New York street to English avenue, about 6 miles.

MISSOURI-KANSAS-TEXAS.—This company plans the construction in 1929 of a

10-stall roundhouse at Fort Worth, Tex., which will complete the program of improved facilities at that point. The cost of the roundhouse will be about \$405,000. On the Henrietta division, between Whitesboro, Tex., and Wichita Falls, it is planned to make line and grade revisions which will involve an expenditure of about \$400,000.

SACRAMENTO NORTHERN.—Examiner Ralph R. Molster has recommended to the Interstate Commerce Commission a finding that public convenience and necessity are not shown to require the construction of this company's proposed branch line from Vacaville Junction to Creed, Calif., 7.5 miles, on the ground that, while the line would be of use in connecting the Suisun branch with the remainder of the company's system, the existing connection by means of the Southern Pacific is not shown to be inadequate to a degree indicating the need of the construction of a line to afford parallel service.

TEXAS & PACIFIC.—This company has filed an application with the State Corporations Commission of New Mexico for the construction of a line from the southern boundary of New Mexico through Lea County to Lovington, N. M., about 65 miles. This line would constitute an extension of the Texas New Mexico which is now under construction from Nonahans, Tex., to the Texas-New Mexico state line.

UNION PACIFIC.—The Utah Public Utilities Commission has authorized the construction of two highway subways under the tracks of this company near Uintah, Utah. The cost of the two grade separation structures, half of which will be borne by the railroad, will be \$41,300 and \$20,650.

YATES & WEST TEXAS.—This new company proposes the construction of a railroad from Rankin, Tex., on the Kansas City, Mexico & Orient, South to Iraan, Tex., 30 miles, in the Yates oil field. Later it is planned to construct a line from Rankin, north to Midland, Tex., on the Texas & Pacific, about 50 miles.

Financial

ATCHISON TOPEKA & SANTA FE.—*Construction Authorized.*—The Interstate Commerce Commission has authorized the Cane Belt Railroad, a subsidiary, to construct a thirty-five mile line from near Lane City, Texas, to Thompsons, estimated to cost \$1,400,000.

CANADIAN NATIONAL.—*Bonds.*—Blair & Company and the Chase Securities Corporation head a large syndicate which was the successful bidder on \$35,000,000 of this company's 4½ percent 40 year callable bonds.

CENTRAL PACIFIC.—*Extension.*—The Interstate Commerce Commission has authorized this company to extend its Walnut Grove branch from Walnut Grove, Cal., to Isleton, 8.6 miles estimated to cost \$700,000.

CHICAGO & EASTERN ILLINOIS.—*Equipment Trust Certificates.*—Halsey Stuart & Company has purchased \$562,000 of equipment trust, series B five percent, certificates subject to approval of the Interstate Commerce Commission.

CHESAPEAKE & OHIO.—*Asks Authority to Issue Stock at Par.*—This company has filed with the Interstate Commerce Commission separate briefs on its applications for modifications of the order by which the commission authorized it to acquire control of the Pere Marquette, so that it may issue 300,000 shares of its own stock at par, instead of 200,000 at \$150, and so that it may pay \$133.33 per share for 174,900 shares of Pere Marquette common held by the Nickel Plate. The brief contends that it would be an error of law for the commission to deny permission to issue stock at par and that there was no intent by Congress to require governmental interference with private management to this extent. It also says it would be discriminatory on the part of the commission, in view of its action in other similar cases and would constitute arbitrary action in violation of the Constitution. It is pointed out that by the issue of new stock at par the stockholders would contribute to the company \$30,000,000 for stock which theoretically could be distributed to them merely as a stock dividend and would replace with new assets the surplus which would thus be capitalized. The brief as to the Pere Marquette stock points out that \$133 has been shown by various criteria to be a fair price at this time and that since the C. & O. will receive the Pere Marquette common held by the Vaness Company at \$69.12 a share and that held by the Virginia Transportation Company at \$117.57 a share, the average purchase price for all the common stock it intends presently to acquire will be \$122.19.

CHICAGO, ST. PAUL, MINNEAPOLIS & OMAHA.—*Equipment Trust Certificates.*—Halsey Stuart & Company has purchased at competitive sale, subject to approval

of the Interstate Commerce Commission, \$690,000, equipment trust of 1917, series G, certificates of this company.

FREDERICKSBURG & NORTHERN.—Notes.—The Interstate Commerce Commission has authorized this company to extend for five years the maturity of two hundred fifty thousand dollars of secured promissory notes.

GRAND TRUNK WESTERN.—Consolidation.—A new company, the Grand Trunk Western Railroad, has applied to the Interstate Commerce Commission for a certificate, if necessary, authorizing it to acquire and operate as a single railroad properties of the constituent companies of the Grand Trunk Western Railway system, controlled by the Canadian National, under a consolidation agreement which has been approved by the Michigan Public Utilities Commission. The commission is also asked to authorize the issuance of 422,400 shares of no-par common stock, in exchange for stock of the subsidiary companies, and the nominal issuance of 49,920 shares. Authority also is asked for the actual issuance of \$31,781,500 and the conditional issuance of \$13,218,500 of first and general mortgage bonds, the actual issuance of \$10,000,000 of debentures, the actual issuance of \$25,000,000 of 6 per cent cumulative preferred stock, and the actual issuance of the 49,920 shares on common stock and 327,680 additional shares, making a total of 800,000 shares, when the commission authorizes the proposed security issues for the purpose of funding or refunding capital indebtedness to the Canadian National and other capital items.

LOUISIANA & ARKANSAS.—Note Renewal.—The Interstate Commerce Commission has authorized this company to renew from time to time an unsecured 5 per cent promissory note for \$2,600,000.

NORTHWESTERN PACIFIC.—Control by Southern Pacific.—The Interstate Commerce Commission has authorized the Southern Pacific to purchase the one-half stock interest in this company now held by the Santa Fe which will give it complete control.

SOUTHERN PACIFIC.—Acquisition of Northwestern Pacific.—The Railroad Commission of California has approved the petition of this company to purchase the interest of the Atchison, Topeka & Santa Fe in the Northwestern Pacific. The latter railroad is now owned jointly by the two railroads.

SOUTHERN PACIFIC.—Trackage Rights.—The Interstate Commerce Commission has authorized this company to operate under trackage rights over three miles of the lines of the Los Angeles & Salt Lake in Los Angeles County, Cal.

ST. LOUIS SAN FRANCISCO.—Purchase of Gulf Texas & Western.—The Board of Directors of the Frisco has approved a contract of purchase of the Gulf Texas & Western a 107 mile line in Texas, subject to approval of the Interstate Commerce Commission.

TAMPA NORTHERN.—Bonds.—The Interstate Commerce Commission has authorized this company to issue \$500,000 of 25 year six percent improvement and extension bonds to be sold to the seaboard Air line at par, the proceeds to be used to reimburse it for advances.

YANKTON, NORFOLK & SOUTHERN.—Aid to Construction.—Knox County, Neb., has authorized the issuance of \$30,000 of bonds to aid the construction of this proposed railroad from Yankton, S. D., to Norfolk, Neb.

YATES & WEST TEXAS.—Incorporation.—The attorney general's department of Texas has approved the articles of incorporation and has issued a charter for the construction of a railroad between Rankin, Tex., and Iraan, 30 miles. The company is capitalized at \$1,000,000 and actual construction is planned to start when approval is obtained from the Interstate Commerce Commission. The officers of the company are: Ira G. Yates of San Angelo, Tex., chairman of the board; W. A. Moncrief of Fort Worth, Tex., President; T. H. Steffens, of Sand Springs, Okla., president of the Sand Springs Railway, vice-president. Other incorporators and members of the board of directors include: W. W. Fleming of Tulsa, Okla., vice-president of the Mid-Kansas Oil & Gas Co.; L. L. Leventritt of Tulsa, vice-president of the Savoy Oil Company; Julius Livingston, president of the Mazda Oil Company; Dr. Emil Ott of San Angelo, Tex., geologist; Dave S. Joseph of Rahway, N. J., president of the Savoy Oil Company; John M. Lovejoy of Tulsa, vice-president and manager of the Anerada Petroleum Corporation; M. M. Doan of New York; J. M. Gillette, Tulsa.

Average Prices of Stocks and of Bonds

	Dec. 26	Last week	Last year
Average price of 20 representative railway stocks.	127.70	125.49	121.09
Average price of 20 representative railway bonds.	92.93	93.20	97.08

Dividends Declared

Central Railroad of New Jersey.—Extra, \$2.00, payable January 15 to holders of record December 31.
 Detroit, Hillsdale & South Western.—2 per cent, payable January 5 to holders of record December 21 to January 6.
 Kansas City Southern.—Preferred, 1 per cent, quarterly, payable January 15 to holders of record December 31a.
 Lehigh Valley.—Common, \$.87½, quarterly, payable January 2 to holders of record December 15.
 Louisville & Nashville.—3¼ per cent, semi-annually, payable February 11 to holders of record January 15.
 Northern Railroad of New Hampshire.—1½ per cent, quarterly, payable January 2 to holders of record December 10.
 Northern Securities Company.—4¼ per cent, payable January 10 to holders of record December 25 to January 10.
 Norwich & Worcester, Preferred, 2 per cent, quarterly, payable January 2 to holders of record December 15.
 Old Colony.—\$1.75, quarterly, payable January 2 to holders of record December 12.
 Pittsburgh & West Virginia.—Common, 1½ per cent, quarterly, payable January 31 to holders of record January 15.
 Province & Worcester.—2½ per cent quarterly, payable December 31 to holders of record December 12.
 Rensselaer & Saratoga.—4 per cent, payable January 2 to holders of record December 16 to January 1.
 Tennessee Central.—Preferred, 3½ per cent, payable January 2 to holders of record December 15.

Officers

Executive

P. J. Neff, assistant to the president of the Missouri Pacific, has also been appointed vice-president and general manager of the Missouri Pacific Transportation Company, the motor coach subsidiary of the railroad, with headquarters as before at St. Louis, Mo.

Jones Fuller, assistant secretary-treasurer of the Durham & Southern has been elected vice-president and general counsel, with headquarters at Durham, N. C., succeeding **E. Thomason**, promoted. Mr. Fuller was born on August 16, 1877, at Raleigh, N. C. He entered the service of the Durham & Southern in December, 1926, as assistant secretary-treasurer, in which capacity he served until his recent appointment as vice-president and general counsel.

Edgar Thomason, who has been appointed president and general manager of the Durham & Southern, with headquarters at Charlotte, N. C., was born on February 14, 1869, in Cleveland County, N. C. He entered the service of the Charleston, Cincinnati & Chicago (now a part of the Southern) in 1889 as agent-operator, remaining in that position until 1891, when he was appointed assistant auditor and paymaster of the same road. From 1898 to 1901, he was general agent of the South Carolina & Georgia extension. He was out of railroad work from 1901 to 1903, in



Edgar Thomason

the latter year entering the service of the Seaboard Air Line as traveling freight agent, leaving this road to accept the position of auditor of the Durham & Southern in 1904. Three years later he was appointed assistant to the vice-president. From 1909 to 1912 he was general manager of the same road. He served as vice-president and general manager of the Piedmont & Northern from 1912 to date and as vice-president and general manager of the Durham & Southern from 1923 to December,

1928, when he was appointed president and general manager.

Champion McD. Davis, freight traffic manager of the Atlantic Coast Line, has been appointed vice-president, with headquarters at Wilmington, N. C., succeeding R. A. Brand, retired. Mr. Davis was born on July 1, 1879, near Hickory, N. C. He entered railway service in March, 1893, as messenger in the freight office of the Wilmington & Weldon (now a part of the Atlantic Coast Line) at Wilmington, N. C. He later served consecutively to July, 1902, in various clerical positions in the local freight office, clerk in the freight claim department, clerk passenger traffic department, rate clerk freight traffic department, and chief rate clerk in the same department. From July, 1902, to Jan-



Champion McD. Davis

uary, 1906, he was chief clerk in the traffic department, he was then appointed assistant general freight agent in charge of the rate and tariff bureau. In November, 1911, he was appointed general freight agent of the Atlantic Coast Line, lines South of Charleston, S. C., and five years later he was appointed general freight agent of the entire system, with headquarters at Wilmington. He was a member of the Southern Freight Traffic Committee, United States Railroad Administration, from May, 1918, to February, 1920, and from March to December, 1920, he was a member of the Southern Freight Rate Committee, Southern Carriers. In January, 1921, he was promoted to assistant freight traffic manager of the Atlantic Coast Line and in August, 1925, he was again promoted to freight traffic manager, in which position he served until his recent appointment as vice-president.

Financial, Legal and Accounting

Charles Jensch, comptroller of the Chicago, St. Paul, Minneapolis & Omaha, with headquarters at St. Paul, Minn., has also been appointed comptroller of the Chicago & North Western, with headquarters at Chicago, succeed-

ing **Lewis A. Robinson**, who will retire from active service on January 1.

Arthur R. Seder, auditor of disbursements of the Omaha has been promoted to general auditor of that company, with headquarters as before at St. Paul, Minn.

Frank L. Fuller, Jr. has been appointed assistant secretary-treasurer of the Durham & Southern, with headquarters at Durham, N. C., succeeding Jones Fuller, promoted. Mr. Fuller was born on October 7th, 1893, at Durham, N. C. He was educated at Woodberry Forest School, Orange, Va., Davidson College, N. C., and the University of Virginia. His appointment as assistant secretary-treasurer of the Durham & Southern marks his entrance into railroad work.

Operating

Walter E. Barrett, assistant division superintendent of the Boston & Maine, with headquarters at Boston, Mass., has been appointed superintendent of the Terminal division, with the same headquarters. Mr. Barrett entered railway service in 1913 with the Indiana Harbor Belt as yard brakeman. He was promoted successively to conductor, yardmaster, assistant general yardmaster, general yardmaster and trainmaster. Mr. Barrett entered the service of the Boston & Maine as assistant superintendent of the Terminal division in January, 1927, in which capacity he served until his recent appointment as division superintendent.

Albert Shaw, superintendent of the Lehigh & Hudson River, has been appointed general superintendent, with headquarters as before at Warwick, N. Y. Mr. Shaw was born on June 12, 1884, at Williamsport, Pa. He entered railway service with the New York Central on March 20, 1904, serving as rodman at Corning, N. Y. He left the New York Central to accept a similar position on the Reading in March, 1905, and the following year was appointed assistant supervisor at Tamaqua, Pa. He was later appointed assistant supervisor of the New York division, also serving in the same capacity at Lansdale, Pa. Mr. Shaw was promoted to supervisor in January, 1912. In July, 1920, he was appointed assistant trainmaster and a short time later was appointed joint assistant trainmaster at Newberry Junction, Pa. In May, 1926, Mr. Shaw left the service of the Reading to accept the position of superintendent of the Lehigh & Hudson River, in which position he served until his recent appointment as general superintendent.

Traffic

G. M. Smith has been appointed general agent of the Baltimore & Eastern, with headquarters at Baltimore, Md.

George E. Merchant has been appointed coal traffic agent of the Buffalo,

Rochester & Pittsburgh with headquarters at Rochester, N. Y.

W. R. Dallow has been appointed manager of industrial development of the New York Central, with headquarters at New York.

C. M. Carlson has been appointed general agent for the Wheeling & Lake Erie and the Lorain & West Virginia at Minneapolis, Minn., succeeding **A. L. Leverentz**, resigned.

Edwin B. Crandall, assistant general baggage agent of the Southern Pacific, with headquarters at San Francisco, Cal., died at the General Hospital in that city on November 22.

Charles C. Taylor, assistant general freight agent of the Mobile & Ohio, has been promoted to assistant freight traffic manager, with headquarters as before at Memphis, Tenn.

Thomas H. Gurney, general passenger agent of the Chesapeake & Ohio, with headquarters at Richmond, Va., has been appointed passenger traffic manager, with the same headquarters, succeeding **J. D. Potts**, deceased.

James B. Trumbull, assistant engineer of construction of the New York, New Haven & Hartford, with headquarters at Boston, Mass., has been appointed industrial development agent in the territory served by the Eastern lines of that company, with headquarters as before at Boston. He will also maintain an office at Providence, R. I.

George H. Eaton, freight traffic manager of the Maine Central, with headquarters at Portland, Me., has been granted an extended leave of absence on account of ill health. **Lucien Snow**, assistant freight traffic manager, has been appointed freight traffic manager, to succeed Mr. Eaton. **Charles K. Hall** general agent, with headquarters at Presque Isle, Me., has been appointed assistant freight traffic manager, with headquarters at Portland, Me. He will be succeeded by **Frank A. Murphy**.

George Morton, assistant freight traffic manager of the Chicago, Burlington & Quincy, has been promoted to freight traffic manager, with headquarters as before at Chicago, succeeding **H. H. Holcomb**, who on January 1 becomes vice-president in charge of traffic of that railroad and the Colorado & Southern. **E. K. Fleming**, general freight agent in charge of solicitation, with headquarters at Chicago, has been promoted to assistant freight traffic manager, replacing Mr. Morton.

Daniel F. McDonough, who has been appointed traffic manager of the St. Louis-San Francisco, with headquarters at Birmingham, Ala., was born on January 28, 1871, at Syracuse, N. Y. He entered the service of the Kansas City, Memphis & Birmingham in December, 1895. In 1901 he was appointed traveling freight agent at Atlanta, Ga., later being transferred to Birmingham, Ala.,

as commercial agent. In 1908 Mr. McDonough was appointed division freight agent at the same point and in 1918 he was appointed inspector of transportation, with headquarters at Springfield, Mo. Two years later he was appointed division freight agent at Joplin, Mo., later being transferred in the same capacity to Birmingham, Ala. He was appointed executive general agent at Memphis, Tenn., in May, 1928, serving in that capacity until October, when he was appointed traffic manager.

Mechanical

Edward Pendergast, general car foreman on the Southern Pacific at West Oakland, Cal., has been promoted to master car repairer of the Sacramento division, with headquarters at Sacramento, Cal., succeeding **Andrew J. Gilson**, who retired from active service on November 1.

W. J. Renix, master mechanic of the British Columbia district of the Canadian Pacific with headquarters at Vancouver, B. C., has been transferred to the Manitoba district with headquarters at Winnipeg, Man., succeeding **F. R. Pennefather** who has retired under the provisions of the company's retirement plan, effective December 31.

Lawrence Richardson, mechanical superintendent of the Boston & Maine at Boston, Mass., has been appointed chief mechanical officer, and **David C. Reid**, superintendent of locomotive maintenance, has been appointed assistant chief mechanical officer. The positions of mechanical superintendent and superintendent of locomotive maintenance have been abolished.

Engineering, Maintenance of Way and Signaling

James D. Moffat, assistant engineer in the office of the chief engineer of the Central region of the Pennsylvania at Pittsburgh, Pa., has been appointed chief engineer of the Dayton Union, with headquarters at Dayton, Ohio. Mr. Moffat will have charge of the elevation of the tracks of the Dayton Union.

A. Behner, telegraph and telephone engineer of the New York Central lines west of Buffalo, N. Y., has been promoted to assistant superintendent of telegraph of the New York Central lines west of Buffalo and the Ohio Central lines, the Indiana Harbor Belt and the Western Union Telegraph Company, with headquarters as before at Cleveland, Ohio.

William H. Petersen, who becomes chief engineer of the Chicago, Rock Island & Pacific and the Chicago, Rock Island & Gulf, with headquarters at Chicago, on January 1, has been in the service of the Rock Island for more than 22 years. He was born in 1867 at Appleton, Wis., and graduated from the

University of Wisconsin in 1889, entering railway service in June of the latter year as a rodman on the Chicago & North Western. From March, 1890, to November, 1891, Mr. Petersen served successively as rodman, instrumentman and resident engineer on railroads which are now parts of the Great Northern and the Northern Pacific, then returning to the North Western as instrumentman early in 1892. The following year he was appointed assistant engineer on the Fremont, Elkhorn & Missouri Valley (now part of the North Western), then being advanced to general foreman of bridges and buildings at Fremont, Neb. From June, 1898 to November, 1906, he was successively, on



William H. Petersen

the Union Pacific, supervisor of bridges and buildings and division engineer at Cheyenne, Wyo., and assistant superintendent at Cheyenne and Ellis, Kan. Mr. Petersen entered the service of the Rock Island in November, 1906, as bridge engineer, with headquarters at Chicago and in 1909 he was promoted to principal assistant engineer with headquarters at the same point. He was appointed engineer of maintenance of way of the First district, with headquarters at Des Moines, Iowa in 1911, a position he held at the time of his promotion to chief engineer.

Special

Byron S. Harvey, vice-president of Fred Harvey, Inc., with headquarters at Chicago, has been elected president, with headquarters at Kansas City, Mo., succeeding **Ford Harvey**, deceased.

C. B. Wright has been appointed chairman of the general committee of Division II—Transportation, American Railway Association, with headquarters at Chicago, succeeding **C. W. Crawford**, who resigned on December 1 to enter other service.

Obituary

Harry Webber, assistant comptroller of the Central Vermont, with headquarters at St. Albans, Vt., died on December 19, after a brief illness.

W. J. Shotwell, assistant general freight agent of the Western Pacific at San Francisco, Cal., died in that city on December 18, from a heart attack.

Byron T. Stanton, first chairman of the Montana Railroad Commission and a member from 1907 to 1912, died at his home at Bozeman, Mont., on December 18 at the age of 72 years.

Edward T. Stone, purchasing agent of the Minneapolis, St. Paul & Sault Ste. Marie and the Duluth, South Shore & Atlantic, with headquarters at Minneapolis, Minn., died in that city on December 22 after a short illness.

W. L. Tracy, former superintendent of the Lehigh Valley at Sayre, Pa., and at one time master mechanic and superintendent of the Missouri Pacific, Louisville & Nashville and Southern, died on December 24 at his home in Shavertown, Pa.

George W. Stevens, superintendent of motive power of the Lake Shore & Michigan Southern (now part of the New York Central) from 1884 to 1899, died at his home at Elyria, Ohio, on December 16. Mr. Stevens was born at Concord, N. H., on July 27, 1847, and entered railway service at the age of 14 years as a shop apprentice on the L. S. & M. S. Later he was advanced to fireman, to engineer and to enginehouse foreman and in August, 1873, he was promoted to master mechanic. He was promoted to superintendent of motive power in January, 1884, a position he held until his retirement from active service in June, 1899.

Fletcher B. Enochs, successively general manager; treasurer and general manager; president, treasurer and general manager; and president and general manager of the Fernwood & Gulf (now the Fernwood, Columbia & Gulf), with headquarters at Fernwood, Miss., from its construction in 1906 to his retirement in 1923, died at his home at McComb, Miss., on December 18 at the age of 67.

Spencer Seth Bullis, formerly an officer of several short line railroads in New York and vice-president and general manager of the Gulf & Ship Island (now part of the Illinois Central), died at Medford, Ore., on December 10. Mr. Bullis was born at East Aurora, N. Y., in 1849. Between 1885 and 1893 he built and operated several logging railroads in Pennsylvania. From 1895 to 1905 he was president of the Buffalo, Attica & Arcade (now the Arcade & Attica), acting also from 1896 to 1901 as vice-president and general manager of the Gulf & Ship Island at Gulfport, Miss. From 1905 to 1911 he was vice-president of the Buffalo, Bradford & Kane (now the Mount Jewett, Kinzua & Riterville) and the Big Level & Kinzua (now part of the Baltimore & Ohio). More recently Mr. Bullis has been interested in an electric interurban railway in the vicinity of Medford.

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